

APRIL
25¢

DOES EARTH'S REAL DANGER LIE IN THE PAST?

fantastic

ANC

ADVENTURES



When the Martian led the three of Saturn
Lee countered with

THE JACK OF PLANETS by PAUL W.
FAIRMAN

MEN BEHIND *fantastic* ADVENTURES

"AMAZING STORIES" EDITORS
CONFER WITH MECHANICAL
MAN ELECTRO REGARDING THE
STATE OF THE FUTURE WORLD



Above: Editor Browne solemnly greets Electro, as Managing Editor Shaffer and friend Sparko approvingly look on

Left: Friend Electro perusing copy of AMAZING STORIES. Said he, after reading halfway through, "This is a terrific magazine! I predict its popularity in my day (he means in the far future) will surpass even what it is today."

THE broad-shouldered, seven-and-a-half-foot-tall Electro stuck out his hand and spoke haltingly: "How do you do." Before your editors had realized this was merely a mechanical man, they had already responded to

the 260-pound metal giant's greeting.

When, recently, your editors were invited to the Litt Brothers Department Store in Philadelphia, to attend a luncheon in honor of Robot (*Continued on page 130*)

The Editor's Notebook

A CONFIDENTIAL CHAT WITH THE EDITOR

MARCH 21—the long-awaited Red-Letter Day! It's practically here. And what makes this one of the most outstanding days of 1952? Well—this is the day that the new FANTASTIC goes on sale! Yes, you heard us—the new FANTASTIC.

THIS IS not to be confused with the magazine FANTASTIC ADVENTURES you are reading now. Next month, you can buy two Ziff-Davis magazines with the word *fantastic* in the title: the present FANTASTIC ADVENTURES—and the first issue, of the Summer 1952 issue, of the new magazine FANTASTIC.

THE NEW FAŃTASTIC: digest size, trimmed edges, 160 pages of the best in science-fiction-fantasy. Our contributors are among the best writers in the country, including some of your favorite FA writers, plus several others that have never appeared in FA. There are stories by Ray Bradbury, H. L. Gold, Kris Neville, Paul Fairman, Walter M. Miller Jr., H. B. Hickey and Isaac Asimov—all tried and true favorite writers in the science-fiction-fantasy field, some of whom appear regularly in the top market magazines. Sam Martinez, chemist and non-fiction writer, is represented here with his second fiction short, a masterpiece of humor. Sam's first story, also science-fiction, appeared in the January 1951 issue of PIC. Plus a suspense-fantasy short by Louise Lee Outlaw, who appears regularly in the top magazines.

ALL NEW and original stories especially planned and written for this first great issue of FANTASTIC. Nine science-fiction fantasy stories, ranging from straight science-fiction to suspense, to the weird, to humor, to fantasy.

AND AS a final treat—an 18,000-word fantasy classic by Raymond Chandler, a writer whose work in other fields has won him acclaim from some of the leading critics, both in this country and abroad. The same lean but colorful style

that graces such books as "The Big Sleep", "Farewell My Lovely", and "The High Window", has been brought into the fantasy field in this story, and is sure to win Mr. Chandler many new fans among this genre.

PROFUSELY illustrated, the new FANTASTIC will represent some of the best science-fiction-fantasy artists in the field—men whose work you are familiar with and have long enjoyed.

THE COVER of the first issue of the new FANTASTIC is a fantasy masterpiece, combining the talents of Barye Phillips, a well-known cover illustrator, and our own art editor Leo Ramon Summers. In order to bring you the most faithful color reproduction possible, a six-color printing process was used! Even the large-circulation smooth-paper magazines seldom use more than four colors on their covers.

AND FOR the start of your new collection—the back cover is a kodachrome reproduction of a famous fantasy painting, the original of which is on permanent exhibition at New York's famous Museum of Modern Art—Pierre Roy's fantasy masterpiece "Danger on the Stairs". Frank Lerner, the photographer who made the color shots of the Sistine Chapel which appeared in Life Magazine some months ago, took the kodachrome from which our back cover plates were made.

WELL, THERE it is: the new science-fiction-fantasy magazine—FANTASTIC—the best in every way—and all yours for only 35c. It goes on sale March 21; we suggest you reserve your copy right now!

ALSO ON March 21, your next issue of FANTASTIC ADVENTURES goes on sale. There's a special treat for you in this May issue—don't miss it! LBS

fantastic ADVENTURES

APRIL, 1952

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All Stories Complete

THE JACK OF PLANETS (Novel—25,000) by Paul W. Fairman 8

Illustrated by Lawrence

Gambling was a religion and a way of life to these Martian Shell Men. So how was Lee to know that only by passing up a royal flush could he win the card game?

THE UNFINISHED EQUATION (Novelette—15,000) by Robert Arnette 46

Illustrated by Frank Navarro

Shubert left a great symphony unfinished; Dickens, a novel. These were for pleasure and beauty. But woe to the world when a great scientist leaves an unfinished equation

THE CHASE (Short—3,000) by E. K. Jarvis 72

Illustrated by Tom Beecham

Johnny and Syl fought furiously from Hell to Ganymede and back again—in their own private war. And heaven help anyone who tried to horn in on them

THE GREEN CAT (Short—7,500) by Frances M. Deegan 80

Illustrated by Ed Emsler

To solve this problem in electricity, Will had to be part tiger, part scientist, and part lover to a beautiful rich girl. And still he was far short in his qualifications

A MORE POTENT WEAPON (Novelette—12,000) by Rog Phillips 96

Illustrated by Lawrence Woromay

People who wouldn't give you the right time, suddenly found themselves confessing everything to this man. Was he Saint or Satan? Was his halo of heavenly fire, or brimstone?

Front cover by Leo Ramon Summers, illustrating a
scene from "The Jack of Planets"

CONTRIBUTIONS: Contributors are advised to retain a copy of their manuscripts and illustrations. Contributions should be mailed to the New York Editorial Office and must be accompanied by return postage. Contributions will be handled with reasonable care, but this magazine assumes no responsibility for their safety. Any copy accepted is subject to whatever adaptations and revisions are necessary to meet the requirements of this publication. Payment covers all author's, contributor's and contestant's rights, title, and interest in and to the material accepted and will be made at our current rates upon acceptance. All photos and drawings will be considered as part of the material purchased.

The Jack of Planets

Lee was lucky to find an Earthman like Jorgman on Mars. Especially when he got in trouble and Jorgman had him killed!



The Martian screamed as the pellet from Lee's gun tore a jagged opening in his chest



By Paul W. Fairman

THE SHIP came down out of the sky in a great flaming arc; down out of space toward Mars. It marked a great circle around one hemisphere of the planet, half of which was under the blaze of the sun; the other half in a semi-darkness through which two moons raced each other toward the horizon.

The arc of the ship grew smaller

after the manner of a diminishing corkscrew; lessening and tightening until, with one last swift run, the silver shell found a landing on the surface of the planet. The jet fire died; the jet smoke hung for a time in a sullen cloud formation, before it dissolved and became nothing.

For an hour the ship sat on the brooding plain; on the plain where no

living thing moved.

Now a port opened in the side of the ship. A ramp went out like the tongue of some hungry space animal. A single figure appeared on the ramp; the figure of a man, pale, weak, emaciated. His eyes were bloodshot and sunken, his jowls fish-belly pale with black stubble contrasting with rather than hiding the pallor.

The man came to the foot of the ramp and allowed his eyes to roam over the scene before him. They had just settled upon the peculiar structure flanking the western side of the landing area, when the man winced suddenly and a look of wonder came into his face.

He slapped sharply at a spot on his neck. Almost immediately he cried out in sudden pain. He placed both hands over his face and crouched as from the onslaught of a swarm of hornets, then turned and staggered, whimpering, back into the bowels of the ship. The ramp was pulled in; the port closed.

Another hour passed before the man again dared the surface of the planet. This time he resembled a huge, clumsy, grotesque doll, the heavy gray folds of a space suit protecting his flesh, his bloodshot eyes peering from a helmet through a section of heavy glass.

The man turned westward and began walking, each step an effort, each movement a studied thing. The half-mile walk consumed another hour, after which the man veered slightly on his course to arrive at what he hoped was a means of entrance into the building ahead. His hopes were fulfilled. As he stepped on the threshold, a door opened before him. He moved inside, slowing, each step a great effort. The door closed.

The moons raced; the planet turned; time passed. One year—two

years—four—seven—twelve. The door never reopened. The man never reappeared.

Out on the open plain, the ship changed form. Six months and its hull was no longer silvery. A year, and that same hull corroded, rusted, dropped away in small flakes. In five years the first hole appeared, and from that time on disintegration set in even more swiftly; until the bowels of the great space master were open to the lonesome sky; until the shell fell away completely; until the ship became one of a dozen of such rotted and unidentifiable hulks dotting the great plain.

Fifteen years and another space queen arced down from the sky. It too described the preliminary gyrations before it settled to rest on the plain. Again a ramp opened—a tongue ran out. This time four people emerged from the hull to go through the same hornet-swatting motions which had occupied their predecessor years before.

And they did what he had done: returned to the ship to re-emerge in the weird space suits. This time the suits were not so bulky. Fifteen years had brought improvements.

As though drawn by some weird, prefabricated pattern, they too directed their steps westward toward the building; they too walked to the waiting threshold and placed their feet theron.

The door opened. They entered. The door closed upon them.

Outside the ship waited, but the four—like the one—never came back. Years—two—four—six. Years of silence, corrosion, emptiness.

* * *

"**A**T THIS stage of your training," Colonel Swain said, "you no doubt feel yourselves to be entirely

familiar with the history of space travel to date."

The group of four seated about Swain believed they had every right so to feel. But there was something in Swain's tone—a mixture of amusement and anticipation—which caused them to exchange glances of uncertainty. Sam Walden—the young man who had won the astrogation competition, who had a grin built into both his face and his disposition—said, "You people been holding out on us, Colonel?"

Colonel Swain smiled fleetingly. "I'm afraid we have." He directed his attention to Jennifer Kane, twenty-two-year-old whizz kid; neurologist, physician, bacteriologist; the ablest exponent of these sciences whose age qualified her for space travel. "Tell me, Miss Kane, what is the past history of our efforts in that direction?"

The girl hesitated, sensing some sort of trap in the question. Then she shrugged. "After the Lunar bridgehead was established in 1978, a ship was built and outfitted for the Mars run."

"*Voyager One*," Barry Carter, the drive specialist, muttered.

Jennifer Kane favored him with a slight frown. "Of course. *Voyager One* blasted off in 1981. It was never heard of again."

Lee Tarp was fidgeting. "The first of two disasters."

Jennifer said, "Stop prompting me. Later, in 1996, *Voyager Two* cleared atmosphere on the same mission. The world is still wondering what became of her."

"Admirably put," Colonel Swain smiled, "And most accurate. Up to a point."

LEE TARP, the nervous one, leaned forward sharply. "What do you mean, sir—up to a point?"

"There were details of both flights that the high brass saw fit not to reveal. The international situation was touchy at the times of both flights. They reasoned the censored details, if publicized, might make us...something of a laughing stock."

"I don't understand," Jennifer said.

"I'll be as brief as possible." Swain's eyes narrowed as he went back into memory. "*Voyager One* carried a crew of four. Among them was an astrogator named Taylor. Taylor, along with the other three crew members, entered the ship under the eyes of twenty thousand people. He did not leave the ship before it blasted off into space."

Swain's half-smile was in evidence again. He obviously enjoyed the role of story-teller. "The situation relative to *Voyager Two* was basically the same; four crew members, one of whom bore the name of Gardner."

Sam Walden's precise mind resented partial details. "That leaves six names—"

"The names of the other six aren't important in this briefing," Colonel Swain said. "We are interested only in Taylor and Gardner. They blasted off, remember, beyond all doubt."

"So they blasted off," Lee Tarp admitted with a frown.

"But, three months after *Voyager One* was lost to our instruments, Taylor was found in Chicago, working in a commercial jet factory."

The group blinked in unison.

"And four months after *Voyager Two* vanished into space, Gardner turned up in a New Orleans night club playing a piano."

"Then both flights were duds," Barry Carter said. "Tell me—how did the high brass construe that as ridiculous?"

Colonel Swain's smile faded as he himself became engrossed in the mystery of the affair. "That isn't

quite how it was. At least, not to our knowledge. Exhaustive search was made for the ships. They were never found. We have no proof they returned to Earth."

"No proof? Then the men you called Gardner and Taylor—the ones you found later—were imposters?"

"No. They were the same men who entered the two ships; that beyond all doubt."

"Then you had your proof. The ships certainly returned."

Colonel Swain sighed. "It would appear so. But there was another bewildering point. Both Gardner and Taylor swore they had never boarded space ships in their lives; they both denied, emphatically, their roles in the first two attempts at space travel."

"They were lying, of course."

"A logical supposition but in this day and age it's almost impossible for a man to conceal the truth. We didn't take their words for it. They were subjected to exhaustive tests. The radial lie detector—the hypnotic-twilight examination—the several derivatives—the chemico-bio basic—" Swain shrugged, though not as gracefully as had Jennifer Kane. "There was no possibility of falsehood. We discovered, however, a blank spot in the minds of each of them. These blanks were identical in pattern. They covered periods beginning a month before each flight and ending roughly five months afterward. Both men remembered vaguely of having *planned* to go to Mars, but their memories were confused and vague. Gardner insisted the memory was a vivid dream he'd experienced and had not quite forgotten. Taylor was entirely unable to explain the memory."

THE FOURSOME slated to take *Voyager Three* into void not

twenty-four hours hence glanced at one another with some misgivings. Lee Tarp spoke first: "I don't like this. I don't like it at all. The basis of Project Space should be pure mathematics. Up to this point it has been. I'm at home with mathematics, but not with day dreams out of the bowl of someone's pipe."

Swain pocketed a memo book he'd been fingering. "What I've told you is entirely true. It sounds utterly fantastic, of course, but let's not become alarmed. Excellent human specimens such as yourselves..." Swain let his eyes mirror admiration and what could have been envy—"should approach the thing with calm logic. You should reason instinctively that nothing springs from other than a sound basis; that the seeming fantasy in this affair comes of our not having all the facts. We have only some seemingly impossible end-results. When the basic data are found, the presence of Gardner and Taylor on Earth—where they apparently had no right to be—will not seem at all astounding."

This rather comfortless advice brought no reply, and Swain went on: "Also, we suggest you have no fears of *Voyager Three's* sharing the fate of its predecessors. Much has been learned in the last five years. Neither of the previous ships may have reached the projected destination, but your ship *will*. Several important corrections have been made. So have no fear. You will reach Mars safely."

Swain got up from his chair. The four arose also and Swain shook hands all around. He smiled again. "I didn't tell you all that just to bewilder you. It's in the nature of another assignment. On top of all the other things you are to discover and record, we'd like you to keep an eye

out for the facts bridging the gap between the previous "blast-offs and the discovery of Taylor and Gardner back here on Earth. The complete story should be most interesting."

"I'm sure of that," Lee Tarp said.

Sam Walden grinned. "I'm not bad with a flute, Colonel. If we don't show on schedule, look me up in one of the symphony orchestras."

It was not a good joke, but it rated a few smiles. It drew a smile only from Colonel Swain. The Colonel clapped Walden on the back. "Very good—very good. And now you people better get some sleep. I'll see you at the blasting range tomorrow."

"I THINK I've got it figured out,"
Lee Tarp said.

The others, lounging at ease in the social room of *Voyager Three*, waited politely to learn what he was talking about. The men wore sports attire, as that was what had been prescribed for these hours of relaxation. Jennifer Kane wore a most becoming dress of bright green. The gown had a high-cut neck and a hem showing only a few inches of calf. This had also been prescribed.

"I think I've got it figured out," Tarp repeated, and Barry Carter set down his drink and said, "If you're waiting for someone to act as straight-man, I'm your boy. What have you figured out, Mr. Bones?"

Lee Tarp, not noted for his sense of humor, frowned slightly. "That yarn Colonel Swain gave us during the last briefing. Looking at it one way, it's quite simple."

"Tell us," Jennifer said. "Make it good and you rate an extra Scotch."

"Well, there's obviously a lie involved in it somewhere. Taylor and Gardner couldn't return to Earth without a ship. If no ship was found, they did not return. So—either the

ships were found, or the two men did not turn up in Chicago and New Orleans."

"Which do you think is the lie?"
"Both."

Sam Walden was puzzled; as were the rest of the group. But even though deeply interested in Tarp's words, Sam never let his eyes travel far from the dials and gauges on the walls of the social room. Captain of the expedition, Walden kept half his mind on the ship at all times. He never quite trusted the automatic controls even though they were fool-proof, and none of the movements of the dozen or so dials was missed.

"Yes, both," Lee Tarp said. "I think there is an ulterior motive involved."

"But what motive could there possibly be..." Jennifer smoothed her dress and crossed her ankles demurely.

"Consider the time and thought that went into the routine they laid out for us. They realized, and rightly so, the grave danger of four people crowded together in a ship for ten weeks far beyond other human contact." Lee Tarp stopped to regard Jennifer gravely. "I happen to know, Jen, that you came within an ace of staying home."

The girl looked startled. "Why—I—"

"You won out in the competition—that's true—"

"And the psychological value of a woman aboard was—"

"—was put forward by a fraction that almost got voted down."

"Never mind all that," Barry Carter said. "Get on with your thesis."

"I was leading up to it. One of our great dangers, they felt, would be boredom. They had no data on the mental pressures of weeks of imprisonment out here in space."

"Then you think that story was

just something to—?"

"Exactly. A fairy tale to help us while away the hours. It was admirably suited for such a purpose. It created within each of us an anticipation of the future we would not have otherwise."

"It was a pretty fishy yarn," Carter conceded doubtfully.

"You win the extra drink, Lee," Jennifer said. "I'll mix it for you."

Lee Tarp's reaction surprised them. He got to his feet suddenly, scowling. Then his mouth twisted sullenly. "I think you're playing with me—laughing at me," he said. "All of you."

Jennifer turned quickly from the miniature bar. "Why, Lee!"

Sam Walden's grin turned into a look of concern. "Now look here, old man—"

But Lee Tarp had quitted the social room, his footsteps echoing up the companionway.

ALONE IN his own cabin, Tarp gave vent to his frustration by slamming a fist hard against the steel door panel. The sharp pain that shot up his arm was refreshing. He sat down on the edge of his bunk, nursed his knuckles, and called himself eight different kinds of a fool.

He didn't belong in this ship; should never have competed for the honor. Grimly, he realized it took more than a sharp mind, a talent for difficult and complicated sciences, to fit a man for space travel. But he'd wanted the berth of cosmologist and had fought hard to secure it. For but one reason. He was in love with Jennifer Kane and he could not live with the knowledge of her being space-bound with three men, himself excluded.

He had prayed for Jennifer's disqualification even while battling for his own position in the crew. When rumor came of her possible elimina-



Shell Man

tion because of her sex, Lee had been joyful. But the objection had been voted down and the final tests given.

Lee knew full well of his own personal shortcomings; his inferiority complex; his lack of emotional stability. But it had not been difficult to hide them from the examining board. Lee had full knowledge of these drawbacks, and knowledge is a powerful ally.

Slowly he stripped off his clothes and climbed into the bunk. Why, he wondered, couldn't he control his abnormalities and instabilities? He'd been highly successful in hiding them. Sadly, he realized that if he had the answer to that question, he would also have the basic key to all human behavior; a key no individual or group of individuals possesses.

He went to sleep, finally, and dreamed of Jennifer Kane clad, not in the fetching green gown, but in a costume more suited to the chorus line in a night club.

THREE RECREATION period in the social room did not break up

merely because one of the crew had walked out, exceptional as the Tarp incident was. The minutes following Lee's exit were somewhat uncomfortable, but the incident was not discussed. The group finished their drinks, and Sam Walden suggested a rubber or two of three-handed bridge; suggested it even though he'd much rather have retired to his cabin and felt the others would have preferred the same.

The rules of conduct, however, stated the get-together should be held every twenty-four hours as a lift to morale, so the table was set up and the game begun.

But Sam played with only a portion of his mind. The rest of it was divided between the wall dials and his personal thoughts. Why in hell, Sam wondered, had Lee Tarp gone off half-cocked that way? He had revealed an obvious instability. Then why hadn't the board spotted it?

Sam Walden had a machine-gun mind. It checked his hand in a matter of seconds and Sam said, "Two no-trump."

Walden was an exceptional man in that he fully recognized his own superior abilities but was entirely without conceit. He knew beyond all doubt he was not only the smartest and most able person on the ship, but also head and shoulders above more than ninety-nine per cent of Earth's population.

But Sam accepted this more as a responsibility than an honor and thus realized Lee Tarp was his personal problem. Realizing also that he'd gotten the bid at four spades and had made it, Sam experienced a natural satisfaction. As he gathered up the cards, however, he could remember no single detail of the play.

Blast it all! Only two weeks out and complications already forming.

Then his natural good humor and optimism took over. Maybe things would work out all right. No use facing trouble until it got in your way.

The clock said five minutes to twenty-three when the second rubber was finished, so Jennifer boxed the cards while Barry Carter folded the table. Jennifer yawned. "It's embarrassing to admit I'm sleepy," she said. "The person with the lightest duties should be the most alert."

"Don't apologize, please," Barry Carter said. "You may have few routine duties, but yours is probably the most important job aboard. What if we got sick? What if an epidemic broke out? Without health, you know, we'd have nothing."

"Well spoken," Sam Walden laughed. "And so long as it's your turn on watch, I'm going to hit the sack. Call me at seven hours."

IT WAS NOT Jennifer's fault that neither man had seen the look of genuine affection in her eyes at Barry Carter's words. She hadn't tried to hide the look. In fact, she'd scarcely been aware of it herself. She'd turned to put the cards into a drawer and when she straightened again Sam Walden had left.

The instant the door closed, Barry Carter made a complete and thorough check of the wall gauges. Jennifer watched him as he circled the room to stand before each gauge, even though he could have read them all clearly from the center of the room. Her smile deepened. She said, "Good night, Barry."

"Good night," he answered. "Sleep well. I'm going to make the rounds and then finish that mystery story I started. It's quite a puzzle."

Jennifer went to her cabin thinking of Barry Carter. He was like a little boy in so many ways. So much so that one wanted to hug him or spank

him, as the mood dictated. So hopelessly and wonderfully methodical. One thing at a time. Finish it. Make it absolutely perfect. Then go on to the next thing with your whole heart, your whole soul. Complete each job, no matter how unimportant, as though the future of the world depended upon it.

Jennifer slipped out of her clothing and took a leisurely, invigorating chemical bath. As she did so, she mused upon the anticipated pleasure of getting back to Earth where one didn't have to spend time deliberately and continuously denying one was a woman. And a rather beautiful and well-put-together woman at that, Jennifer conceded as she towed herself before the mirror.

As she slipped into her nightgown, she laughed aloud. It was all so silly. She knew more about men—their tissues, their emotions, their libidos—than they knew themselves. Yet she continued to marvel at their immaturity, their inability to regard things in the proper light.

Although she meticulously obeyed all the rules as to dress and personal conduct, she was still annoyed at not being allowed more comfort and freedom. A pair of shorts, for instance. No garment was as comfortable as a pair of shorts. Why on earth couldn't men look at a girl's legs, admire them, enjoy them, but realize at the same time that this was neither the place nor the moment?

Jennifer got into her bunk and was asleep in two minutes flat.

Barry Carter went over the ship with a fine-tooth comb. When he finished the two-hour job, every grease cup had been looked into, every plastic oil line meticulously checked, all readings were down in the book and the jet spectrum double-checked for accuracy.

ONLY THEN did Barry repair to the pilot house and sit down with his murder mystery. But after ten minutes he'd spotted the killer and his interest dragged. He lowered the book and sat staring at the black observation panel. Under him was the steady vibration of the well-shielded atomic pile deep in the bowels of the ship. Barry felt a thrill of pride at the thought of *Voyager Three*, sturdy, safe, dependable, thundering on through the void. Good ship, he thought. You'll get us there.

His thoughts drifted to the demonstration of Lee Tarp in the social room. He wondered about it, but let it slip quickly from his mind because that same mind worked under perfect discipline and complete control. Possibly Lee Tarp would go off his rocker, but Sam Walden was in command. Therefore, it would be Sam's problem and Barry knew Sam would handle it. Barry blandly refused to worry about the problems of other people.

But Colonel Swain's yarn about the two men reappearing back on Earth—that one was open to everybody. Had Lee been right about the reason for its telling? A rather infantile conclusion, Barry thought. And how stupid of the board to worry about boredom on this flight! How could anyone become bored in the midst of this greatest of all adventures? The ten weeks of its duration was scarcely long enough to get acquainted with this greatest of all ships.

So far as he was concerned, Barry would have been happy to spend ten months inside her mighty shell.

Barry's thoughts now drifted lower—to Jennifer Kane's legs. That was another fool ruling. Why shouldn't a girl show her legs—if she had nice ones, like Jennifer's—on a space ship

as well as anywhere else?

Barry glanced at the clock. He was entitled now to a fifteen-minute nap. He set the signal bell and went dutifully to sleep.

Down below, the atomic pile shattered billions of microscopic worlds per second in its mad fury. Rearward, the jets roared and sent flaming tails into the void. *Voyager Third*, proud queen of the spaceways that she was, hurled herself down the sky toward the pin point at which she would rendezvous with another proud queen—the planet Mars.

ON THE WALL of his cabin, safe from questioning eyes, Sam Walden had an old-fashioned calendar. Also a stub pencil hanging by a string. Every revolution, at precisely twelve o'clock, he took the stub pencil and crossed out another day. This was of course a rather absurd way of keeping time, but Sam got a secret satisfaction from it.

Up now, bathed, dressed and shaved, he crossed out a day and realized with pleasure that only a single week of allotted time remained. He thought immediately of Lee Tarp. Lee had done an excellent job in getting hold of himself. The scene in the social room had not been repeated. Of course the other members of the crew, from that time on, had handled Lee with kid gloves, probably without realizing it themselves. Such procedure had helped greatly. Sam combed his hair, hoping fervently that Lee wouldn't upset the apple cart with success almost at arm's reach.

He left his cabin wondering what there would be for breakfast. Damn the examining board! Rotten blunder they'd made in Lee Tarp's case.

Four revolutions later, Sam preambled breakfast with the statement: "I think it would be a good idea to

start talking over the landing routine."

"Good idea," Barry Carter said. "It might save us from *boredom*." Barry tried to bite the word off, but too late. He shot a glance at Lee Tarp and was relieved to discover no reaction. "First Lee makes the atmosphere and temperature checks—right?" Barry added hurriedly.

"That's right, although we're pretty sure as to what he'll find. An hour's survey from the ports is then in order as a safeguard against hostile action. If any active life is discovered, we don't land until we've ascertained its true nature. Then we—"

"—open the ports and put our feet on the soil of Mars," Jennifer said dreamily.

Lee Tarp picked nervously at his food. He was frowning. When he spoke, he directed his words at Sam. "Don't you think Jennifer should stay aboard, in any case? At least until we've checked things outside at first hand?"

Jennifer appeared startled by the suggestion. Sam turned thoughtful. "You may have something there," he said. "There's nothing in the project book covering the point, but—"

"In a pig's eye!" Jennifer snapped. "When you three get ready to step off this ship I'll be right in line, and don't you forget it!"

Lee Tarp flushed. "I—I'm sorry. I didn't mean to offend you. It's just that—"

"I know! I'm a woman. But remember this: I won my spurs in tough competition, and I plan to use them."

"Maybe we'd better drop the subject," Sam Walden said with a grin. "I go first. You can draw straws to see who follows me in what order."

LEE TARP dropped his fork suddenly. Getting to his feet, he mut-

tered, "Sorry. Guess I was born to say the wrong thing," and hurried from the dining room.

Jennifer said, "Darn! I thought he was going to hold up nicely."

"Let's not bet against it," Sam Walden said. "Wish we could figure out what's eating his hide. Maybe I should have a talk with him."

"I wouldn't advise it," Jenifer replied. "Might do more harm than good. Let's just wear the silk gloves and try to muddle through."

This was possibly good advice. At any rate, Lee Tarp managed to re-establish a grip on himself and the time passed agreeably and smoothly until the day, hour, and moment Sam Walden announced to the group then assembled in the pilot room: "Roughly an hour, I'd say. Take the observation chair, Barry."

Jennifer Kane and Lee Tarp stood shoulder to shoulder looking down at the planet beneath them. Barry Carter dropped into the observation chair and adjusted the glasses. "All set," he said.

Sam Walden, seated at the control board, did not answer. A distinct tension had settled over the room. An electric silence reigned until Barry Carter, having computed swiftly after checking several instruments, said, "Three hundred miles."

"Cutting the wing-jets," Sam replied. "Watch it."

"In the 'arc and holding."

Suddenly the port went black. Jennifer gasped. She grasped Lee's shoulder. "Look! Look at the two moons!"

Crackling minutes passed after which daylight flashed up instantaneously.

"Large mountain range on the portside," Barry Carter announced. "Landing possibilities to starboard. Level country. Plenty of room."

"We're being pulled to starboard," Sam said. "Must be tremendous iron

deposits underneath." Then, "Keep the prime jet on quarter power. We're going in."

Barry Carter became nothing more than a brain—checking instruments, staring out the observation port. "O-nine-two—drag five—eleven and a quarter degrees."

After thirty seconds of silence, Sam snapped, "What else! Come awake, man!"

Barry shrugged. "Nothing else. It's flat as a pancake. Go on in."

Lee and Jennifer did not have to be ordered into the chairs. As the ship scraped bottom they sat deep in sponge rubber. The shock was negligible. A few moments later, Sam said, "Cut the jet," and they all sat waiting for possible stopsickness. None came.

Sam Walden got up from his chair, grinning. He said, "Well, kids, you can dial long distance now and tell the folks. We're on Mars."

BARRY CARTER lowered the glasses and handed them to Sam Walden. "That's some kind of a long building over there, but look at those brown piles to the left. If they aren't space ships I'll eat my hat."

Sam took the glasses and studied the piles in question. "Ships of some sort, at any rate. That one about a mile out still has its form."

"But good lord!" Barry said. "They must be thousands of years old! Durilium, is practically corrosion-proof."

"Maybe they aren't made of durilium."

"Then they can't be space ships."

Sam gave the glasses back to Barry, after which he crossed the room, got another pair out of a drawer, and returned to the window.

"There are over a dozen of them," Barry said. "This looks to be a graveyard of space craft."

"There are only two that I'd swear are the McCoy. The others could be the remains of—anything."

Barry turned quickly to his skipper. "Sam, I've got a hunch we're going to run into a lot of things that don't make sense."

Sam Walden grinned. "I'm surprised at you, chum. Remember what Colonel Swain said? Everything makes sense if you have the facts."

"Yeah—even two guys turning up on Earth after twenty thousand people saw them leave on a one-way trip."

"TEMPERATURE okay," Lee Tarp said. "We won't even need overcoats."

"And the air?"

"Excellent. Only a trifle lighter than we expected it to be." Lee turned suddenly upon Jennifer; so suddenly the girl was startled. He said, "Jen! I love you! I'm so head-over-heels gone on you I can't eat or sleep. I can only go around acting like an idiot." His arms were around her and his lips pressed to hers before the surprised Jennifer could react.

Her mind reacted first, controlled her reflexes, and she extricated herself from the desperate grip with a marked gentleness. "Lee, please! I'm—I'm honored—and flattered. Flattered indeed. But this isn't the time or the place for such things."

Jennifer stepped back, hoping she could kill, or at least retard, this utterly absurd proposition without bringing on a crisis. She smiled and patted her hair. "It isn't in the rule book, Lee. You know that. Love and jets don't mix."

"You're making fun of me."

"Lee, stop it! I'm not! But can't you see we have no time for—"

"Of course, darling! I know that. But promise you'll keep it in mind—

think about it—until I have the opportunity to plead my case with you more—"

Jennifer risked reaching out and patting his cheek. "Of course I will, Lee. But let's get back to the pilot room with the reports. They'll be waiting."

"Of course."

It was with great relief that Jennifer hurried down the companion-way, Lee tagging silently at her heels. And it was with some misgiving that she thought of the future.

"I BELIEVE," Sam Walden said, grinning, "that all the rules have been complied with. You may unbar the door, Mr. Carter."

Barry released the air valve and the four stood waiting while the slow release lifted the double safety bars from their sockets and cleared the lock mechanism.

"Weapons ready?" Sam asked.

Each of them carried a small hand gun loaded with thirty-eight death-dealing pellets of negligible size.

"All ready," Jennifer said.

The port opened with maddening deliberation. Then they had to wait until the ramp made up its mind to push out and set its outer edge down on Martian soil. It touched finally, ending the sound of escaping air. "An historic moment," Sam said as he placed his foot on the ramp.

"Oh, get on with it," Jennifer snapped. "We aren't the first. Other people have been here before."

They filed out—Walden first, then Jennifer and Lee Tarp, Barry Carter bringing up the rear.

Around them lay a silent, waiting land with a strange mood all its own. A fine, fuzzy plant growth carpeted the soil, its color scheme an uninspiring mixture of green and sickly yellow. The sun, far sharper of outline than when viewed from the

Earth's surface, seemed more subdued, less friendly, than the sun they had known.

Westward lay a peculiar structure obviously built by hands—human or otherwise. It was of dirty yellow stone, low-roofed, and comparatively narrow. It began at a point within view and stretched away into the distance, reminiscent of the great wall of China. The plain was surprisingly level, and dotted here and there with the melancholy, rusted hulks Barry and Sam had studied through glasses.

"A dying planet," Jennifer murmured.

Sam squinted at the building that flanked the plain. "Possibly—but not dead yet. I think—what the hell!"

Sam slapped his cheek sharply as he whirled to spot the insect that had stung him. He could not discover the pest, but now the other three were also dodging the invisible hornets. Jennifer cried out and brushed desperately at the flesh of her right wrist.

Now the attack from the invisible swarm increased in violence. Lee Tarp dropped his weapon in a frenzied effort to ward off what no one could see. Sam Walden scooped up the gun. "Back inside," he barked. "Quick! Something's wrong here."

They re-entered the ship with far less dignity and speed than they had quitted her. Sam hit the valve and the door swung too.

"Murder!" Jennifer gasped. "What do you make of that?"

BARRY CARTER wiped his throat hard, then closely studied the palm of his hand. This gave no clue. The hand was clean.

Sam Walden rubbed his jaw as he turned to Lee Tarp. "I thought you checked the atmosphere."

"I did. It was entirely clear of

poisons or gasses. It gave no clue whatever to—"

"The stuff comes down from above —like rain," Barry said. "The intake valve is low down—protected by the bulge of the hull. Better make a note to have that changed in future ships."

Jennifer was ruefully massaging her neck. "You'd think the brains of Project Space would have had the sense to put a valve in the right place!"

"One of those things," Sam said. "It looks like space suits and oxygen for us."

Fifteen minutes elapsed during the sojourn to the equipment room, after which the group again assembled at the exit port.

"Radio okay?" Sam asked from inside his helmet. He got three okays in return and turned the port valve. Again they marched out onto Martian soil.

"We'd better head straight for that building over there—if that's what it is."

"We'll certainly find it deserted. The racket we made coming in would have brought out even dead men."

"That's hardly a safe supposition. They may be cautious."

A distance of approximately two miles separated the ship from the strange building. But the going was easy, what with the dead level topography and the springy undergrowth. It was a little like walking on a huge bed-spring.

The distance narrowed swiftly and the hike was uneventful. Until Lee Tarp whirled and brought up his gun. "For God's sake! Look!"

Lee's gun spat a dozen times before Sam was able to knock it down.

"Why did you do that?" Lee flared.

"Don't be so trigger-happy. He—or it—is going away. Scared to death. Fortunate you fired wild."

They stood staring at the strange creature kiting off across the plain. For want of more information, the thing could have been tentatively classed as humanoid. It was apparently naked and its color corresponded almost exactly to that of the fuzzy plant-growth carpeting the plain.

"It—I almost stepped on it," Lee Tarp marveled. "It was completely camouflaged. It could have killed us in our tracks!"

THE CREATURE had faded from sight now, blending again with the protective coloration of the fuzz-bush.

"There are points worthy of note," Barry said. "It was evidently impervious to the stinging rain. That means its hide is shell-like in quality."

Jennifer shuddered inside her light space suit. "Did you see its eyes?"

"Yes," Sam Walden said. "Glassy. They appeared to be covered with windshields. Some sort of a transparent protective device probably."

Lee Tarp had turned again, uneasily, toward the building. "Do you suppose that's a door?"

"Looks like it. Let's find out."

They marched single file across the short intervening distance. They found a suggestively shaped inset in the smooth stone wall, but nothing in the way of a knob, a knocker, or a signal-bell to indicate the rectiliniar indentation as a means of entrance to the building.

A small step had been placed at its base, however, and as Sam Walden set his foot on it, the door opened as silently as the cover of a coffin.

The four stood motionless, somewhat startled by the promptness of this robot hospitality. "Shall we go in?" Lee Tarp asked.

What with the angle of outdoor lighting, it was impossible to see in-

side. Only a rectangle of gray darkness met their eyes.

"It certainly seems the logical thing to do," Jennifer said. "We can't stand out here all day."

"It shouldn't be too dangerous," Barry said. "We're all armed."

Sam Walden said, "Let's go. Single file. Close together."

They marched, on tiptoe, through the mysterious door. It closed behind them so silently it was moments before they realized they were cut off from escape.

But the fact was not alarming. They appeared to face nothing dangerous. The building—about forty feet wide—was nothing more than an endless corridor, a hall with no termination, and furnished in a mood and with a grandeur that was indeed remarkable.

The floor was yellow and shining, constructed of a stone akin to the marble found on Earth. A single design—a black-bordered square—was set into the floor at regular intervals as it stretched off into a distance which defied the eye.

THE WALLS were of the same shining material, but done in gleaming white, and against which, at regular intervals, stood huge, highly polished black stone statues, done with a brilliant craftsmanship. In various poses the stone men stood, crouched, and sat in eternal silence, as though waiting patiently for some far-distant day of judgement.

"They're—they're magnificent," Jennifer breathed.

"Masterpieces beyond doubt," Sam Walden said. "But I'm more interested in finding out where the light comes from."

It was a soft, shadowless radiance which apparently had no point of source.

"The walls," Barry said. "It's a



Jennifer Kane

glow that comes from the walls. Some sort of fluorescent material is mixed with the stone—or laid over it."

"I think you're right. We mustn't fail to get data on that. The secret of this lighting alone is worth the trip."

"Well," Lee Tarp asked. "What do we do? Start walking?"

"I'm not quite sure," Sam admitted. "It would certainly be a long walk, and I wonder if we'd get anywhere."

"Seeing it from upstairs I'd say this building stretches over four hundred miles. And there were others."

Jennifer laid a hand impulsively on Sam's arm. A gesture not overlooked by Lee Tarp. "The canals!" she exclaimed. "The famous canals of Mars. Why, they're long, narrow, endless buildings. Who would have dreamed it?"

"Not our astronomers, at any rate." Sam Walden's mind went off on another track. "Those ships out there—do you suppose the two *Voyagers* are among them?"

"Possibly," Barry Carter replied.

"But if so, where did the others come from? Only two ships left Earth for Mars, but a hell of a lot more seem to have arrived."

"You're assuming again that they *are* ships," Sam said. "Let's wait for more—"

His words were cut off by a scream from Lee Tarp. They whirled around to find Lee entangled in as weird a predicament as they had yet come upon.

LEE HAD wandered some fifty feet up the corridor and had paused in front of an imposing black statue. Now he appeared to have become embroiled with a mass of writhing metal snakes. They had come up out of the floor—a dozen of them—to wind themselves around his body. They were headless, each one terminating in a flat metal disc not unlike the nozzle of a showerbath fixture.

Lee, struggling with a loop around his throat, screamed again. The rest of the group ran swiftly to his aid. But as they moved along the corridor, new action synchronized into the scene. The statue in front of which Lee had stopped swung inward, toward the wall, on a pivot. Then the entire structure of the niche in which the statue had been placed followed suit, went back into an arc out of sight, and a doorway was revealed.

The tall figure of a man stood in the center of the opening, and at that moment the metal snakes began uncoiling themselves and proceeded rapidly back into the floor whence they had come. The man spoke. His voice was clear, resonant, somewhat like a tolling bell. He said, "My most abject apologies. I should have gotten here sooner. I regret most sincerely this disturbing experience."

The eyes of the group were held by this striking individual. Even Lee Tarp seemed to have forgotten his

terrifying experience. The man was tall—well over six feet—slim as a reed. He was clad in an olive-green cassock, belted at the waist with a black sash. His face bore a healthy tan, highlighting the pure white of his hair.

There was a first impression among the group of great age in this individual. A closer inspection, however, did not bear this out. His face was entirely free of wrinkles. His eyes were clear blue, bright, and guileless as those of a child. A gentle-smile revealed white, even teeth, and the flesh of his hands bore no marks of age.

"I am Jorgman," the man said. "I welcome you to Mars, the life-source of the worlds, the jack of planets, the ancestral home of Man. Won't you come in?"

It occurred to Sam Walden, as he moved forward with the rest, that the speech should have sounded flowery, bombastic. Yet it did not. This he could attribute only to its ring of sincerity; to the imposing personality of the man who made it.

It was only after the hidden door had swung to, that the group realized they had entered an unknown and possibly dangerous place without protest, with their guns hanging impotent and forgotten in their hands.

BUT THERE was the voice of Jorgman to drive away instinctive doubts. "The mechanism in which you became entangled was not lethal," he said, speaking to Lee Tarp. "It would have merely imprisoned you—as it did—until I arrived. It is the way we defend our inner door from possible marauders. An ancient device which hasn't really been a necessity for thousands of years."

Jorgman smiled brightly, spreading his attention now over the entire group. "And now," he asked, "which of you is the leader?"



Jorgman

Sam Walden reddened. He felt somewhat like a school child caught in a forbidden place by the master. "My name is Sam Walden," he said, and swiftly gave the names of the others. "We are the members of an expedition from the planet Earth."

"I know," Jorgman said. "We observed your arrival and have anxiously been awaiting your appearance in the hall."

"It seems you could have been a little more hospitable," Lee Tarp said, glancing around uneasily. "We sat out there for over an hour. You could have come—"

"Lee—" Jennifer said sharply.

But the smiling Jorgman was already explaining. "Perhaps an apology is in order, but you see, we never leave the hall except under direst emergency, and no emergency existed. You would automatically land where you did because of the great iron deposits under the plain. And once landed, there was no place for you to go except here. You see, you had to come to us."

"Just who is us?" Sam Walden

asked.

Jorgman's eyes twinkled. "Why, the people of Mars, of course. You see, most of us live underground, what with the untenable conditions on the surface of the planet."

"But we saw someone out there," Lee said. "A man—or was it a man? He ran away."

"There are some who live on the surface. The true Martians, as it were. They correspond in some degree to the American Indian. Not in intelligence, necessarily, but let us say in circumstance. They are an excellent example of how evolution struggles to protect existing life. We must go into it deeper sometime."

It occurred to Sam Walden that there were a great many things to be gone into, but he recognised the impossibility of doing it immediately.

Jorgman said, "And now, you must all be rather tired. If you will walk along with me I will show you to your apartments. This way please," and their host led them down a long flight of stairs.

TH E HALLWAY motif had vanished with the closing of the door. They stood now in a large high-ceilinged room built of the same shining, marble-like material, but decorated and furnished in a more intimate manner. There were sprawling easy chairs, huge oil paintings. And over-all, an aura of such wealth and quiet dignity as to be breathtaking. There were many other rooms such as this one; rooms which completely held the interest of the group as they passed from one to the other.

Only Barry Carter seemed preoccupied. "Would you mind telling us something about your atmosphere?" he asked. "When we left the ship it seemed we were stung by invisible hornets—"

Jorgman's laugh was gentle, musi-

cal. "It's a surprise all visitors encounter when they come by space ship. An interesting phenomenon. You see, the atmosphere on Mars is very thin and, as you no doubt know, the atmosphere of a planet is its only shield against bombardments from space. It was a condition you encountered in a far more violent state when you set foot on your moon."

"Of course," Jennifer said.

"Here, the atmosphere has reached a point where it can almost, but not quite, protect the surface of the planet by burning the meteorite bombardments through friction. It eliminates them to all intents and purposes, but microscopic fragments, supercharged with tremendous heat, are just in the process of cooling off when they drift to the surface of the planet. It is such a finely drawn matter that the particles sting severely at a distance of four feet from the surface of the surrounding plain. On the surface itself, they are found to have burned out at the time of contact."

"But what about higher or lower ground?"

"The principle holds. If one were to lie face up in a shallow trench on the plain one would not get stung. But this is the lowest point on the surface of the planet, so the burning ash cannot very well be avoided. On the higher ground—up in the ridges—exposure is fatal. Even the Martians do not go there."

"The Martians?" Jennifer asked. "I don't quite understand. Aren't you a—?"

"A Martian? No. I was born in St. Petersburg, Florida, a very long time ago. The Martians are distinguished by their—well, somewhat different appearance and the armourlike quality of their skin."

Jorgman turned, his manner, while not in the least offensive, signalling an end of the subject. "These are

your quarters," he said cheerfully. "Your meals will be served by Martian attendents—except for the sugar. You will find that in a wall safe behind that picture. Here is the combination. Please return any sugar you do not use to the safe." After this bewildering statement, Jorgman bid them goodnight.

They watched in silence as he passed from the room and disappeared from sight. A full minute of complete silence passed. A silence broken finally by Lee Tarp. "There's a note of insanity about all this. I don't like it."

"All I've got to say," Barry Carter stated, "is that it's better than outdoors. Let's get out of these rigs. And I'm damn hungry. I wonder when they serve dinner?"

Jennifer smiled at him tenderly. Lee Tarp caught the smile, and it engendered a misery in his heart almost akin to physical sickness.

IT WOULD seem," Sam Walden said, "that we must change our preconceived ideas about Mars."

"True," Barry Carter replied, "but just what are we going to change them to? I'd say we still have damned few facts."

The group was seated before the remains of as fine a meal as they had ever eaten. The dishes, while not identifiable, did not differ greatly in taste from those found on Earth. The meat had been roasted and could easily have been beef, but the Earthlings did not think so. The vegetables were more tangy than they were used to, but highly delightful. And the appointments—the silverware, chinaware—would not have been out of place in the finest hotels of Earth cities.

"We know Mars is inhabited," Sam said.

"We were pretty sure of that before." Barry lighted a cigarette and

frowned. "Oh, I'll grant you my statement sounded somewhat exaggerated, but you'll have to admit we haven't even begun to get answers."

"But you've got to admit," Sam said, smiling, "that we've been pretty comfortable while we've waited for them."

"I think it's about time to go hunting for Jorgman," Lee said. "I don't like this. I don't like it at all. There's something decadent about all this ease—this softness."

Jennifer smiled. "Catch up on your sleep while you can, Lee. It's a long way back to Earth and you didn't do so well on the ship."

Lee scowled. "Just the same—three days of this waiting. Maybe this is some sort of a trap. Maybe he doesn't intend to show up."

Jennifer's smile faded. "The only thing that makes me uneasy is these Martians—the ones that wear the shell-skins." Jennifer shuddered slightly. "The way they look at you through those windshields. And sugar locked in the sa—"

She stopped speaking as the sound of soft footsteps broke in. They turned to see Jorgman coming toward them through the broad portal leading into the suite. He approached the table, smiling. "It wasn't eavesdropping, Miss Kane, but I couldn't help overhearing you, and I hasten to put you at your ease. You need have no fear of the Martians. They feel it an honor to serve on the staff indoors and would do nothing to lose the privilege."

Sam Walden got to his feet. "It's been quite a while, sir. Won't you sit down?"

"Thank you," Jorgman said softly. "I'll take this chair."

"We were wondering," Barry said, "if we'd been deserted."

"I really must apologize. It was an

error in judgement. I wanted to give you ample time to become acclimated to the atmosphere and general conditions." Jorgman smiled equally upon the group. "And now I suppose you have many questions. I am at your service."

"I have a question," Lee said. "Will you cooperate with us in gathering the data we came for? We'd like to blast off for Earth as soon as possible."

JORGMAN considered, his head tilted in a birdlike attitude. "Just what data did you have in mind?"

"That should be self-apparent. We're from Earth. We want to know about your ways—your customs—there are any number of things—"

Sam Walden raised a hand. "I think if you'd let our host talk, Lee. He just offered to answer questions."

Lee frowned angrily. "I'm afraid I don't like your manner, Sam. Since setting foot on this planet you've become so—so casual—so lackadaisical. You act as if you *enjoyed* all this."

"I do," Sam Walden said. Then, pointedly turning away from Lee, he spoke to Jorgman: "There are so many questions, sir—"

"Please omit the *sir*. Your formality makes me somewhat uncomfortable. You are entirely at liberty to call me Jorgman."

"Thank you. As I said, there are so many questions, it might be wise to start at the beginning—with your words of greeting. You said, if I remember rightly—'Welcome to Mars—life-source of worlds...' Exactly what did you mean?"

"Precisely what I said," Jorgman smiled. "In the beginning, Mars was the only inhabited planet. Its recorded history goes back over six hundred thousand years—somewhat longer than that of Earth, I'm sure you will agree. Mars' science, when in its

glory, reached developments not yet even conceived by Earth scientists."

"You are saying there were intelligent beings on Mars before Earth was populated?"

"My dear boy, you yourself—all of you—are descendants of Martians. There is no such thing as a native Earthling. Four hundred thousand years ago—a mere afternoon in cosmic time—the Martians built space ships and inspected the various planets of our little family. They discovered, to their sorrow, that only one—that which you call Earth—existed under conditions favorable to intelligent life. Venus is entirely without water—a hot, dry, incredibly violent globe. Mercury is without atmosphere. The outer planets are enveloped in poisonous gasses, ice, and desolation.

"But Earth was ideal, so the Martians sent a colony there long before Atlantis sank beneath the waves. The cosmic pattern of rise and fall, the mighty mould of evolution, began the slow but sure work laid out in the Master Pattern far above our conception. My son—dozens of civilizations rose and fell on your planet thousands of years before your pyramids were built—hundreds of centuries before your California redwoods were tiny seedlings."

SAM WALDEN interlaced his fingers and sat staring at them. "You can imagine, sir—Jorgman—information such as this, thrown broadside, is rather stunning."

"Beyond doubt. And I suggest you verify it at your leisure. We have several huge libraries here on Mars. I will be glad to place at your disposal books dating back four hundred thousand years—and still in excellent condition. One's greatest regret is the shortness of a lifetime. One can but scratch the surface of recorded knowl-

edge in the few short years given one."

"A hundred civilizations," Jennifer breathed. It's—it's astounding!"

"It sounds like a lot of nonsense to me," Lee Tarp said bluntly. "I suggest we keep our feet on the ground and not swallow every fish thrown at us."

Jorgman ignored the outburst. The others seemed scarcely to hear it.

"How large is the population of Mars?" Barry asked.

Jorgman considered. "No one knows the census of the Shell People, as we call them. Underground there are close to ten thousand, I'd say."

"Ten thousand! On the whole globe?"

"Yes. You see, Mars is a dying planet." Jorgman waved a delicate hand. "All this will die soon."

"Soon?" Jennifer asked. "How soon?"

"We estimate that in a matter of twenty-five thousand years the end will be signalled. By that time all but a small portion of our atmosphere will have escaped into space."

"How about creating an artificial atmosphere?" Barry asked.

Jorgman shook his head. "Theoretically it sounds feasible, but the practical application would prove otherwise. There are limits to what man can do. The task is beyond human capacities."

"But even twenty-five thousand years," Jennifer said. "That's a long time."

"It is but a moment in the life of a planet. This world is even now on its death bed. So we feel an attempt to repopulate it would be rather futile."

"I take it there is a sharp dividing line between the—well, the inner and the outer Martians."

Lee Tarp sprang to his feet. "I think I've had enough of this," he snapped. "I'm going to bed."

"I hope you sleep well," Jorgman murmured, but Lee was already out of earshot.

There was the silence of deep embarrassment, broken finally by Jennifer. "I hope you'll forgive Lee," she said. "He has not been feeling well. It was a long hard trip."

"I quite understand. Let us hope the restful conditions here will mend him somewhat."

"I'm sure they will," Barry said, as though anxious to get on with the discussion. "I've been sitting here sorting out questions—trying to classify them in order of importance—"

JORGMAN smiled and bowed from the waist, a gesture few men can accomplish gracefully while sitting down. "Don't feel that you will tire me," he assured. "I am quite at your service."

"Thank you. When we crossed the plain we saw a great number of rusted-out hulks. Tell me—are they remains of space ships?"

Jorgman nodded. "It is regrettable they are not in better condition. You would no doubt be interested in looking them over."

"How old are they?"

Jorgman studied the ceiling. "Their ages vary. The oldest—mere rust spots on the prairie now, and long grown over—date back almost half a million years. Others are of more recent vintage. The most recent of them are perhaps one hundred thousand years old."

"None more recent than that?" Sam Walden asked, leaning forward in his chair.

Jorgman raised a finger as though correcting himself. "Oh—I'm glad you pressed the point. I am in error. The ships used by the two previous units of your expedition are there also. It quite slipped my mind."

"Then they did get through!" Barry said.

"Yes. The first arrival was somewhat sad. Three of the four crewmen died of a rare malady en route. The fourth man was in a pitiable condition. The second group was more successful. They arrived in the bloom of health."

"Then they are here? In this building?"

"Not here in these apartments, but certainly somewhere in the underground city. You see, the structure above ground is a sort of projecting spine, so to speak, of what lies beneath the ground. All the entrances to the outer world are located in the Great Corridors. Our race moved underground several thousand years ago. There is a great deal of dwelling space."

Barry tried to interject a question, but Jorgman was ahead of him. He smiled at Jennifer and said, "Miss Kane inquired about the Shell Folk when we were interrupted. It was rude of me to overlook her question."

Jennifer held up a protesting hand. "It's quite all right. I think our questions are tiring you. We've been very rude to grill you this way."

Jorgman's smile was unchanging. "It has been a pleasure, I assure you." But he was obviously fatigued, as he took advantage of the loophole Jennifer offered. "Suppose I call upon you tomorrow and we will continue our most pleasant exchanges? Would that be satisfactory?"

"We'll look forward to it."

Jorgman bowed. "A very good night to you all," he said. He turned and walked away; disappeared without looking backward.

THREE WAS a minute of silence after Jorgman's exit. Then Barry Carter asked, "What do you make of it?"

"Blessed if I know," Sam Walden sighed. "I can only think of the im-

portant questions that want asking."

"It wasn't his fault," Jennifer protested. "He was certainly agreeable, but the man's not made of iron."

"He said he was born in Florida. What about that?"

"Why were those space ships allowed to rot away?"

"Taylor and Gardner showed up back on Earth—or Swain claimed they did. How did they get there?"

"He said those people with the hard shells outside are the true Martians. If that's the case, what are the ones who live indoors—Arabians?"

"How do we go about contacting the crews of the first two *Voyagers*?"

"And why are they still on Mars?"

"That's right? Why didn't they return to Earth?"

Sam Walden got to his feet. "This is a waste of time—asking each other questions. Let's save our ammunition until the oracle comes again."

"You're right," Barry said, "but there's something we should discuss—Lee. What are we going to do about him?"

"I wish I knew," Sam said slowly. "That examining board and their tests! I'll have something to say to them when we get back."

"And another thing: how soon does that rusting process set in? I'd hate to go out some morning and find holes in the ship. We'll have to check with Jorgman on that."

"Right. Good night." Sam left the room, leaving Barry and Jennifer alone. Jennifer smiled. "This is a pretty big place. Want to walk me home?"

"Certainly. You're in the left-hand hallway, aren't you?"

"That's right. About five blocks down. I found the sweetest little gray and gold room. Where do you suppose all this came from?"

Jennifer hooked her arm into that of Barry. He said, "Damned if I

know. But half a million years—they certainly had plenty of time."

"With only a few thousand population, I'd say it was a matter of the people being over-housed. The next U.S. presidential candidate ought to take that for a slogan. 'Twenty rooms for every voter!'"

Barry grinned, and looked down at Jennifer's pert face. "This is it," she laughed. "I suppose the gal should invite the boy in for a drink, but I haven't located the liquor cabinet yet."

"If the boy isn't a cad, he should refuse."

Jennifer stood rather close. "Are you a cad?"

"I could be, with a little practice."

"What does a gal have to say to get kissed?"

"Not another word."

At that moment, down the hall, Lee came softly through a doorway. He saw the kiss, the embrace, the second kiss. Lee turned pale. Perspiration sprang from his forehead; his knees trembled. It was an effort to get back to the doorway and inside without being seen.

"I TELL you we're in a trap," Lee Tarp said.

Two days had passed since Jorgman's last visit. Jennifer, Barry, and Sam had been seated in one corner of the huge drawing room which was a part of their living quarters, when Lee Tarp came hurrying in, showing every sign of extreme agitation.

"Lee—where have you been all day? We were beginning to worry."

"And there's plenty of cause to worry. I can't for the life of me understand the complacency with which you three take all this!"

Sam Walden glanced up quickly, Lee's words bringing the situation sharply into focus. Possibly, Sam thought, complacency was the term to

describe his attitude of the past several days.

He frankly admitted to himself that never in his life had he felt so completely at home. Had the deep peace of this place, the sense of brooding timelessness, wrought some swift change in his personality? He felt completely severed from any life he had ever known. Even the ship, sitting on the plain not two miles away, seemed as distant as the stars. And Earth—was there such a place? The work, the discipline, the drudgery that had preceded the trip to Mars was no longer a part of him. It was some vague and ill-formed dream.

Clear realization of all this brought a sense of guilt to Sam Walden. "You spoke of a trap, Lee. What did you mean?"

"Just this," Lee Tarp said in a tone of triumph. "Jen asked me where I've been all day. Well, I've been investigating—hunting for the guy in the green nightgown. I must have walked thirty miles."

"And what did you discover?"

"That we're locked in."

"Locked in?" Jennifer frowned and crossed her legs with a quick movement. "That's absurd."

"Far from it. I never did find Jorgman. He must sink into the floor after he leaves us. But I discovered a perimeter of locked doors! This trap of ours is a great circle about two miles in diameter. There is room after room after room. You walk on and on, through suites, hallways, huge and complicated floor plans, until your head reels and you feel like something out of *Alice in Wonderland*."

"That's what you've been doing all day—walking through the house?" Barry asked.

Lee scowled. "I can do without your humor," he snapped.

"Sorry."

"This place staggers the imagina-

tion. Then you come finally to a closed door that won't open. A heavy door no ten men could smash through. That's what happened to me—I came to this door and found it locked. So I began circling, trying to get around it. I found other doors, locked and bolted. There are thirty or forty of them, trapping us like squirrels in a cage."

SAM WALDEN was studying the strange pack of cards he'd picked up from one of the tables. The pack was somewhat larger than the standard bridge decks used on Earth. But the faces of any bridge deck Sam had ever seen bore no resemblance whatever to the cards he held in his hands.

Beyond doubt there was a sequence to them. There seemed to be seven suits, and all the cards in the deck were picture cards. He ruffled the deck through his fingers, his eyes on Lee Tarp. "What would you recommend?" he asked.

"That from *you*?" Lee gasped.

"I don't understand."

"Why, Sam! You're supposed to be the leader of this group. You hold the responsibility for our safety. I come to you and tell you we're in danger. And you ask what do I recommend!"

"I'm still asking," Sam said quietly, "although I can't see why you're upset. We aren't trapped and you know it. All we have to do is walk out the way we came in."

"And that's what I recommend. We've gained our objective! We made the Mars run. Let's get into the ship and blast off. Next time we'll come with a fleet, and if any doors bar our way we'll blast them down."

"We didn't come here as warlords," Barry said. "We came in peace, and so far we've been received in peace. We came seeking information about this world."

"And what information have we gained?" Lee demanded heatedly. "A cock and bull story by an old character who crawls out of the wood-work now and again to charm us with his manners. If we repeated what he's told us—repeated it on Earth—we'd be laughed off the planet."

Sam Walden silently conceded that Lee had something. It was true that Jorgman's enlightenments took on the stamp of wildest fantasy when considered outside the aura of Jorgman's own remarkable personality. "We'll ask a few pointed questions when he comes again, Lee. Does that satisfy you?"

"No. I don't think we should be here when he comes again."

Sam put down the deck of cards, his manner turning slightly hostile. "No one has lit any firecrackers under us. I see no reason to run screaming to the ship and blast off."

Lee's lips quivered. He turned his eyes on each of them singly. "You're all against me," he said. "All three of you. You're laughing at me."

"Lee!" Jennifer exclaimed. "Stop saying that!"

He regarded her grimly. "I know why *you* want to get rid of me. I'm not exactly blind."

Jennifer's eyes widened as she sought words with which to reply. But before answer could be made, Lee whirled on his heels and rushed from the room.

"Why does he always do that?" Barry asked.

"Run away, you mean?" Sam asked. "You're the neurologist, Jennifer. Possibly you can answer the question."

JENNIFER, her eyes on the doorway through which Lee had made his exit, spoke without thinking. "It's the clue to what ails him; the fear of facing any situation he can't dominate.

He strikes out blindly, and when the going gets tough, he runs away."

"Good evening," Jorgman said. As the trio turned to see him standing just inside the room, he said: "I must apologize for apparent eavesdropping. It sprang from a natural hesitancy. I didn't want to walk in on what appeared to be a private family quarrel."

Jorgman smiled brightly and approached the seated Earthlings. There was about him the attitude of the perfect host.

"We expected you back sooner," Sam said, and was immediately ashamed of the chill in his voice.

Smiling cheerfully, Jorgman ignored both the words and the chill. He glanced brightly at the strange deck Sam was again fingering. "Oh, I see you've found the bible of the Shell Folk. There is some interesting data concerning those cards. They are the oldest mediums of chance in existence. Their surfaces have not been changed one iota in half a million years."

"I don't quite understand," Jennifer said, frowning slightly. "You called them the bible of the Shell Folk."

Jorgman was seated comfortably in an easy chair. "They are an amazing people, even to we who know them. To you, their customs, heritage, and backgrounds will be even more astounding."

Each of the trio had formed questions to throw at Jorgman as soon as he appeared. But now, lulled possibly by the music of his voice, the magic of his gentle personality, the questions were momentarily forgotten.

"Their whole existence is based upon gambling," Jorgman said. "Their history has hinged, literally, upon the turn of a card. They have no family life because the more attractive females are constantly changing hands. Any work necessary for their existence is done by those who lose working hours to others. A man may win

enough working hours with the cards to have a dwelling place constructed for himself. But likely as not, it will have changed hands a dozen times before the house is completed. No Shell Man will work of his own accord. All he ever gets comes from gambling, or does not come at all."

"You mean gambling is actually a religion with them?"

"The only religion they have, and there is a strict moral code concerning it. Cheating is unheard of."

"Are they a warlike people?"

"They fight among themselves, but there has been no war between the inner and the outer races for many hundreds of years."

"Are you so much more powerful?"

JORGMAN smiled. "Two factors contribute to the continued peace. Any of the Shell Folk who are temporarily running in bad luck can get food from any of several stations near our chemical food plants and underground gardens. Also, while certain of them are allowed to enter the buildings and serve us, there are areas in which they are never allowed to enter. That makes for mystery, and mystery makes for fear." Jorgman's smile deepened, as though what he was about to say amused him. "Also, their representatives are permitted to witness some of our...ah...magic, shall we say? Certain of these ceremonies are most impressive."

"What ceremonies?"

Jorgman appeared pensive. "Well, for instance, our executions."

Sam's eyes widened. "You have capital punishment here?"

Jorgman smiled again, brightly. "It is necessary to maintain a certain discipline at times," he said. "And now possibly you'd like me to show you the game the Shell Folk play with the cards."

"There are other things we are

more interested in," Sam Walden said. "For instance, we would like to contact the members of our two previous expeditions."

"Certainly, but that might take a little time. I have no way of knowing where they are. A search would have to be made."

"Are we at liberty to make that search?"

"Of course, but I would insist upon procuring you a guide. This underworld is a vast, sprawling area. With so few inhabitants, a stranger could easily get lost."

"When could you arrange for the guide?"

"In a few days. Let us say a week at the latest."

Sam glanced at his two companions and Barry shot a question at Jorgman: "You told us you were born in Florida. I presume by that you meant the state on Earth?"

"Quite true."

"Then would you mind telling us how you got to Mars?"

"Not at all. We have quite a number of representatives on Earth who are always on the lookout for likely prospects for residence here. You see, while we don't augment our population, a certain number of replacements are sometimes necessary. We seek the highest type of individual; people whose desires and temperament suit them for life among us. When such persons are found we invite them to come here."

"I was contacted some forty years ago. It took months to convince my sponsor I was suited to come to Mars. But I was finally admitted and—" Jorgman's placid face wore its eternal smile—"that was that."

"But couldn't you be a little more specific? The means of transportation. Are there hidden space ports on Earth?"

Jorgman thought very carefully be-

fore he replied: "Yes—and no. But there is something I want to mention before I forget it. It concerns your friend Lee Tarp. It has been brought to my attention that he leaves the building and fraternizes with the Shell People."

THE TRIO looked at one another in surprise. "You must be mistaken," Jennifer said. "He's made no mention of it to any of us. I'm sure he hasn't been out of the building."

"My information is usually correct," Jorgman said gently. "And not knowing their ways, I fear he could become badly involved. Situations could arise whereby we would be powerless to help him."

"But what possible reason could he have for—"

This time Jorgman's tone was hard: "There could be only one possible reason. And now I must bid you good day. I will arrange for a guide to take you through the underworld as soon as one can be located."

Jorgman always vanished with a speed not indicated in his leisurely stride. Thus he always left questions hanging on the lips of his guests.

But this time they scarcely noticed his departure. All questions were forgotten in view of the startling news.

"What do you suppose Lee is up to?" Sam asked.

Barry shook his head in bewilderment. "Do you think Jorgman is right about his leaving the building? Where would Jorgman get his information?"

"From the Shell People who work in here. The ones that bring our meals and make our beds."

Jennifer said, "They're the most illusive creatures I've ever encountered. I haven't been able to get within speaking distance of one since we've been here." She shuddered slightly. "Not that I've cared to particularly."

"They're certainly timid," Barry said. "At least, in here."

"I wonder if they aren't following orders from Jorgman? Lee may have been right about him, at that. I get the impression he doesn't want us to know too much."

"That yes and no business about how he got here was very enlightening," Barry said wryly.

Jennifer said, "You think then that the help avoids us to keep us from asking questions?"

"I don't know what to think, but I'm worried about Lee. What do you think we ought to do? Ask him about it?"

After a pause, Jennifer said, "I don't believe he'd tell us the truth."

"Then we've got to watch him. You and I, Barry—tonight."

"If he goes out tonight."

"We'll have to watch until he does. It's the only way we'll find out what's behind it."

"Couldn't you order him to stay inside?" Jennifer asked. "You're the skipper."

Sam frowned. "It would mean putting a guard on him night and day. That's impossible. We haven't enough people."

"We'd better lay for him in the corridor behind a couple of those statues. It's the only way he could get out."

"Then we won't say anything to him until we've got something definite to go on."

"I don't like being left out of this," Jennifer said.

Barry grinned. "You don't think I'd let you go out among all those beautiful Martians, do you?"

Jennifer tried to keep from blushing, but she knew it was impossible. "Afraid of competition? See if you can sort a bridge deck out of those cards. We didn't bring any from the ship."

IT WAS warm clad in a space suit crouching behind the brooding

black statue. Sam fought the desire to scratch his nose, and glanced three statues down the line to where Barry was probably in the same predicament. They'd been waiting over half an hour; ever since Jennifer reported that Lee had entered his room.

Faced with the discomfort and uncertainty of this procedure, Sam debated the wisdom of confronting Lee and demanding an explanation. He vetoed the idea again, however, because he was sure he wouldn't get the explanation.

With time on his hands, he went back to scanning the general situation, and felt again that strange peace and contentment which seemed to charge the very air of the spacious apartments. He frankly admitted it had wrought a change in him. There were things to be learned, certainly, but why the need of hurry? Details had to be worked out for the return trip. Normally, Sam Walden would have been true to his training—sharp, alert, efficient. But now...

His mind drifted into another track. After all, what was normalcy; and what was the abnormal? Possibly the keen, driving Sam Walden was the truly abnormal person. Maybe there was far more to life than—

Sam tensed as the key statue, down toward the exit, swung slowly backward. The door opened and Lee Tarp appeared, carrying a bulky package.

Lee waited for the statue to swing back, then started down the corridor, taking a flashlight from a pocket of his space suit as he walked. He obviously had no idea he was being watched.

Sam Walden waited until Lee went out of the corridor into the black Martian night. Then he came from behind his statue and motioned to Barry. Together they went to the door and waited for several minutes before risking an exit. Sam tested the

radio by saying, "We'll be able to follow his flashlight."

"Right," Barry replied. "Shall we go?"

There were no moons in the sky at this hour, and the plain was as black as the inside of a closet. But out across the fuzz-growth, the beam from Lee Tarp's flashlight could be seen jerking through the darkness.

Barry raised his arm and opened his mouth to speak. He closed it before any damage was done, remembering Lee's radio would pick up his words. He felt the pressure of Sam's hand on his shoulder, and they moved side by side after the dancing light.

FOR TWENTY minutes they pushed on through the night, hand in hand so they would not lose each other. Then little Phobus dived up over the horizon and Sam Walden flung himself to the springy fuzz-bush, hauling Barry down with him.

The delay was short-lived, however, because they soon discovered the little moon did not shed enough light to give them away.

Barry felt Sam's helmet touch his own. Muffled words. "Turn off your radio."

"It's off."

"Let's get going. Be ready to duck, though. That other moon should be along in a minute."

"Where in all hell's he going?" Barry grunted.

But he got no reply because Sam was already up and moving. Barry clambered erect and trotted after his companion—landed beside him in one long stride as his bunched muscles defied the light gravity of the planet.

Ten more minutes with only Phobus giving scant illumination. Then Lee's flash disappeared. Simultaneously, Sam grabbed Barry's arm and leaned over to touch helmets.

"Can you still see it?"

"Nope."

"He's either spotted us or ducked in somewhere or both. Maybe we'd better stall a minute."

They fell prone and lay in the fuzz-bush for several minutes. Finally Barry said, "Look—why all this pussy-footing? You'd think we were the sneaks in this deal. Let's get up there and find out what's going on. If he sees us—okay—he sees us."

"All right. But don't turn your radio on. I think maybe we can find out more if we don't pass out any calling cards."

They got up and continued their trek—walked until Barry leaned over and sharply banged helmets. "You see that? That glow?"

"Uh-huh. It's about where Lee's light disappeared. The light's on again, but it's behind something."

"That isn't Lee's light. It's got a greenish cast."

They spotted the ruins of the space ship simultaneously, signalled in a common motion and said nothing. Now they went forward slowly, bringing each foot down with care.

"I still say barge in and find out," Barry grumbled.

"Take it easy. I've got a hunch he isn't alone."

The greenish glow increased as they approached the ship. It was a huge rusted hulk, now half-gone from the swift corrosion prevalent on the planet.

Sam Walden took Barry's arm and drew him quietly toward one end of the skeleton where Sam had spotted a jagged break in the lower arc. They went in under the break and cautiously raised their heads.

IT WAS a strange scene, reminiscent, in the greenish glow, of a color painting out of some book on demonology. On what had been the forward deck of the ship—and protect-

ed by resistant sections of overhead metal—twenty or so of the Shell Men squatted in a circle. In the center of the circle was another of these true Martians, and as Sam and Barry raised their heads to peer in, he was dealing cards to the waiting players.

Barry leaned close to Sam. "Good Lord! A card game! The damn fool comes clear out here to play cards."

"Lee's got his helmet off. Turn on your radio," Sam said.

Tarp sat in the far side of the circle, his eyes glued on the dealer. His eyes, with the eyes of the other players, watched each card as it was flung out. The dealer was an expert. Every card he shucked off the deck spun ten feet through the air to land squarely in front of the player for whom it was destined. The players sat with their hands folded until the deal was completed, each player receiving ten cards.

"They sure use a whale of a deck," Barry said.

"You notice something else?"

"What?"

"Lee isn't playing. He hasn't any cards."

"Then he just came to watch. I'm beginning to feel like a fool."

"That package he was carrying. It's beside him there and it's open. Let's wait a little while. I still want to see what goes."

The deal now complete, the Martian who seemed to be running the game from the center of the circle made a signal and the players picked up their cards.

The scene tightened. Both Barry and Sam could feel the tension as the players sorted their cards. The dealer gave another signal and—starting at a point determined in some manner, and moving clockwise—the players each threw a card back at the dealer, who carefully laid each on top of the one before until all the players

were represented.

A pregnant pause, the players sitting motionless, waiting. Then the dealer gathered up the trick, carried it to the perimeter of the circle and handed it to the winner.

This broke the tension. The favored player immediately got to his feet and approached Lee Tarp. Eagerly the Martian took a handful of small objects from a sack he had swung to his arm. He handed the objects to Lee Tarp, who inspected them critically. Then Tarp dropped them on a pile of similar objects in front of him and reached into the package by his side. He brought out a handful of what appeared to be white powder and poured it into the hands of the eagerly waiting Martian who transferred it to his sack and returned to his place in the circle.

NOW THE process was repeated.

A second winner approached Lee and the same ritual was enacted.

"That's sugar he's giving them," Sam said.

"And if I'm not wrong, they're paying him gold nuggets in return. Or at least some kind of metal that looks like gold."

"I don't get it."

"Evidently they play cards for the privilege of making a trade with Lee. Screwy as it sounds, that must be it. Jorgman told us gambling was their life and their religion, but this looks insane."

"When Jorgman said everything they do hinges on gambling, he must have meant what he said."

"But it's still off-center. Why are they so hot to get a handful of sugar?"

"I don't know, but I'll bet it ties in some way with the sugar being kept under lock and key back in the apartment. Evidently it's locked up so the Martians working in there can't get

at it."

"But what's so precious about sugar?"

"Under the circumstances, I think I can guess. We know nothing whatever about their diet, their metabolism, or even their physical makeup. I'll bet—"

"One thing's certain. Lee's been talking to the Martians working inside. He found out a few things and got himself invited to the game. If that stuff is gold they're giving him, he's getting to be a very rich man."

The dealer had all the cards again and was shuffling the thick deck with a skill any Earth gambler would have envied.

"Well, what do we do?" Barry asked.

"Go back where we came from, I think, and wait for Lee. I've got a feeling it wouldn't be smart to barge in there and upset the *status quo*. When Lee comes back, I lay down the law. For all we know, this could lead to trouble."

It led to trouble before the words were out of Sam's mouth. The deal had scarcely begun when one of the players sprang to his feet with a high-pitched shriek that carried even through the helmets of the eavesdropping Earthmen. They stared dumbfounded as the Shell Man hurtled straight across the circle, knocked the dealer sprawling, and dived at the package on the floor beside Lee.

THE MARTIAN had obviously gone berserk. His hand snaked into the package to come out filled with sugar. Like one driven to complete desperation, he crammed the stuff into his mouth, ignoring Lee, ignoring the other players, ignoring all save the ecstasy afforded by mouthing the sugar.

Lee Tarp was the first to react. The two Earthmen saw his lips form an

oath as he sprang up and jerked a gun from the pocket of his space garb. He turned the weapon on the Martian and pressed the trigger. The tiny pellet smashed against the creature's shell with a force that tore a jagged opening in his chest armor, and knocked him ten feet across the deck.

A roar went up from the assembled Martians, and both Sam and Barry were amazed at the speed with which they moved. A half dozen of them swarmed over Lee before the sound of the gun had died. They tore the weapon from his hand and locked his arms securely behind him.

Barry acted upon instinct—certainly without thought. The merits of the situation were lost upon him as he brought out his own gun and vaulted into the ship. He heard Sam's warning cry: "Barry! Hold it! Take it easy!"

It was too late to hold it, however, and Barry, from the corner of his eye, caught sight of Sam following him into the ship.

They didn't have a chance. Even armed as they were, they didn't have a chance. This became starkly apparent as the Martians, reacting with bewildering speed, overwhelmed them even as Barry sought to press the trigger of his gun.

The Martians were talking among themselves and seemed to look for leadership to the one who had been dealing from the center of the circle. The Earthlings saw his stiff lips move; saw his arm gesture authoritatively.

Then Barry and Sam felt themselves lifted—lifted easily, as though their weight was of little consequence —by a single Martian holding each of their arms.

But the real surprise was yet to come. It came after the Martians filed out of the ruined space ship.

There they waited, as though for another signal from their leader. The signal came and the Martians began to run.

Even with their minds filled with the urgency of the situation, Sam and Barry could not help but marvel. Two of these Shell Folk holding each of them off the ground and running as teams, with a speed that would have compared favorably to that of an Earth horse in full gallop. And doing it as though it were the most natural thing imaginable.

Speechless, Barry glanced back to see Lee Tarp struggling in the grip of another pair. Lee appeared to be screaming from more than mental anguish. He turned and twisted his head as though facing an icy sleet storm, and Barry remembered the hot ash—visualized it stinging Lee's exposed head and face.

It was indeed a strange spectacle. Twenty or so Shell People flying over the level Martian plain as though all hell followed after.

"I don't know where we're going," Barry heard Sam say. "But I'll bet it doesn't take us long to get there."

JORGMAN stepped into the room and took off his helmet; a much lighter one than those the Earthmen had. Sam and Barry, seated on a rude bench, the only piece of furniture in the place, got wearily to their feet. Their helmets lay on the rough dirt floor of their prison, but they had not removed their suits.

Jorgman regarded them pensively; neither with condemnation nor cordiality, but as if they were a source of trouble which had to be eliminated quickly. "Good day, gentlemen. You appear to have fallen into an unfortunate situation."

"You're most observant," Sam said drily. "If you can get us out of here, we'll be much obliged."

Barry was still marveling. "Those are the damndest people I've ever seen! They *ran* here. They lit out over the plain like a bunch of wild horses. They ran for an hour without stopping for breath. We must have come forty miles."

"Forty-four, to be exact," Jorgman said. "You are learning things about the Shell Folk. It pains me that you aren't learning under pleasanter circumstances."

"But they have no reason for holding us. It was natural that we went to Lee's rescue."

"I'm sure your offenses are not of grave import," Jorgman said gently.

"And Lee?"

Jorgman shook his head. "I'm afraid I can do nothing for your friend. They might possibly turn him over to me for trial, and then execution if he is found guilty—"

"Trial and execution! But the Martian didn't die! Or did he? He was standing up and walking around back at the space ship!"

"No, I understand his wound was painful, but superficial."

"Then what's this absurd talk about execution?" Sam Walden demanded.

"Not absurd so far as the Shell Folk are concerned." Jorgman smiled gently, sadly. "You have no doubt heard that Earth expression: When in Rome, do as the Romans do?"

"Of course, but—"

"It also applies to Mars. You see, the Shell Folk consider violence as the most hideous crime. It is of such rare occurrence as to be—well, I suppose you would call it sensational."

"But the death penalty—"

"THEY LOOK upon the intent rather than the result. A most admirable trait in many ways. They consider Lee's attack entirely apart from its consequence."

"But you can certainly do some-

thing!"

"I doubt if I could prevail, even if I were inclined to try."

"You mean you won't even attempt to intercede?"

"I wouldn't dream of it, and my attitude must also be your attitude. You see, the law of the Shell Folk is just, in their own eyes. It has the dignity of an age-old heritage. We who dwell with them on this planet have learned wisdom from them. We have never sought favor for one of ours, and time has proven the wisdom of our restraints."

"By the way," Sam Walden said, "we never did find out what it was all about. Lee was giving them sugar for gold."

Jorgman shook his head with some sadness. "It is partially my fault. There was so much to explain that I quite overlooked telling you about the sugar—the reason we keep it under lock and key. You see, sugar acts upon the Shell Folk in the same manner as certain drugs and narcotics act upon Earth people; sometimes even more violently. The Shell Folk have a physical makeup all their own. They live mainly on *parzwan*, the bushy vegetation that grows on the plain. Sometimes they cook it, sometimes eat it raw, thus making them entirely vegetarian, but in a somewhat different sense from vegetarian mammals upon Earth. There is no sugar whatsoever in the Shell Folk's diet. The majority of them avoid it as the average Earthman avoids heroin or morphine. But, sadly, a few of them have a weakness. Your compatriot learned of it and turned it to his own uses."

"That was gold they gave him?"

"Yes. It is comparatively common on Mars and has little value. Lee Tarp must have inquired, as it would not have occurred to the Shell Folk to offer it as payment. They get it from

the ancient ruins up in the higher country."

Sam sighed in perplexity. "You leave me to make a hard decision," he said. "To see a countryman executed for—"

"He has not been executed yet," Jorgman reminded. "He may be freed at the trial."

"That's possible, Sam," Barry said.

"In the meantime," Jorgman said, with more cheer in his voice, "I discussed your case with the leaders and you are free to accompany me. It seems you were seized before absolute proof, by action, that you were intent upon violence."

"Can we see Lee before we go?"

Jorgman shook his head. "I'm afraid not. A law-breaker is kept in isolation until he is executed or proven fit to associate again with others."

Barry got to his feet. "We'd better go with Jorgman, Sam. Maybe we can think of some way to help Lee but, regardless, we've got to remember Jen. She's our responsibility too."

"A very sensible attitude," Jorgman said.

He led them out into the street of the shabby village and they noted the respect with which Jorgman was regarded. He spoke in a rapid, guttural tongue and immediately a half dozen of the Shell Men came forward. They picked up their three guests in the usual manner and sped off across the plain at the speed of galloping horses.

JENNIFER said, "I think you've gone completely mad, Lee." She sat up in bed, the sheet drawn about her shoulders, and regarded Tarp in sad appraisal.

Lee replied with bitterness: "You don't believe that. It's just that you're against me. You're siding with the others. All three of you have dis-

criminated against me from the first—banded together—left me out of things—”

“Lee!”

Tarp's eyes fell in quick confusion at the sincerity of Jennifer's protest. But they were quick to narrow again—his face quick to harden. “Even now—this minute. Are you glad to see me? Did you congratulate me on escaping from a band of barbarians? Your only comment is, ‘Lee, you're insane!’ ”

Jennifer sought words, but Lee Tarp went swiftly on: “But don't worry, darling. I'm not criticizing you. It's not your fault. It's the influence of Walden and Carter.” He stepped to the side of the bed, leaned forward. “I love you, Jen. I love you deeply and sincerely, and—” he glanced over his shoulder, his manner suddenly crafty, as though he sensed eavesdroppers—“and I can give you tangible proof of my love.”

Lee's eyes were burning now, his voice husky. “A great thing has happened, darling! A great, great thing for you and me! While Sam and Barry have been content to lounge around, I've made investigations—bestirred myself!”

“Really, Lee—”

“Wait until I tell you. I found one thing on this stupid planet that is of value to us. Gold, Jen! These hideous Shell People—”

“I heard about that. Gambling with the Martians—shooting one of them!”

“Of course they told you. And put me in a bad light. But Jen, Sam and Barry don't know the truth—what I have in mind. You and me, darling—just the two of us going back to Earth with a ship full of gold. Enough to buy mansions—untold wealth—”

“You mean leave Sam and Barry?”

“Of course! They seem to like it

here, from what I've been able to see. And besides, this is the chance of a lifetime. We can't afford to be sentimental. You know they'd never let us take back a shipload of gold.” Lee straightened and sneered. “They're too deeply immersed in the scientific aspects of this jaunt. They'd refuse to be practical.”

“Lee! Stop it. Up to this point I've felt sorry for you. I didn't think you were beyond help. But—”

His manner changed again. He froze. There was the suggestion of flintiness in his eyes. “You don't mean that, Jen.”

“Of course I mean it!”

“You don't love me?”

“That's absurd. Of course I don't.”

He did not explode into protestations of his own love. He did not plead. A slight smile twisted his lips.

“You don't love me,” Jen said evenly. “You are incapable of true love. What you feel is only salve for your overweening ego; merely a reflection of self-love—the only emotion that stirs you.”

“Just you and me,” Lee said. “Alone in the ship on the trip back to Earth. I think I could change your views. I'm willing to wager you'd end up loving me.”

“I've had about enough of this!”

Lee moved with the speed of a cat. Jennifer was unable to react before his hands were upon her; before the small drug-cap he took from his pocket settled tightly over her nostrils.

Then it was too late to react.

JENNIFER WAS wearing a space suit when she regained consciousness. The helmet lay on the ground beside her and the strange green glow made her blink—made her feel she'd come into a dream world of some sort; a world tenanted by grotesque phantoms.

Then her eyes focused somewhat more clearly, and she recognized the crouching figures as brothers, at least, to the servants she'd glimpsed in the sumptuous apartments.

A gag had been drawn tightly over her mouth and she lay partially against a rough, metal wall. As she strove to draw herself into a more comfortable position, Lee glanced in her direction. But there was nothing of tenderness in his look. His eyes were hot, feverish, and he turned immediately back to the business at hand.

There were perhaps a dozen Shell men present, and as Jennifer awoke they were in the process of passing before one of their kind who squatted stolidly on the open deck of the ancient space ship. Each of the Shell Men deposited a large handful of nuggets on the fast-growing pile before the seated one.

Now the donations to the common heap had been completed, and the Shell Men stood back to form a rough circle around Lee and the keeper of the gold hoard.

Finding that struggle against her bonds and against the gag was useless, Jennifer turned her attention to the tableau before her. The squatting Martian was now fingering a large deck of cards, shuffling, passing them from one hand to another with amazing skill. He eyed the sack between Lee's knees and grunted an unintelligible word.

Lee evidently knew the meaning of the word, because he pushed the bag forward into a position beside the sack of nuggets. Now the Martian shuffled the cards for a final time and laid them on the floor. The circle broke into a line, each Martian passing by to stoop and solemnly cut the deck.

The final cut was reserved for Lee.

The cutting, Jennifer thought, seemed of great importance; almost a ritual, so carefully and deliberately was it accomplished.

THETHE MARTIAN began to deal two hands. Lee snatched up his cards eagerly, and the light from the green lamp sitting nearby reflected a glitter in his bright eyes. His tension, his nervousness, showed in every movement.

The Shell Man was more deliberate, giving equal attention to his hand and to Lee's face, as though the study of his opponent was fully as important to him as the study of the cards.

Each player held thirteen of the thin purple rectangles upon which every Martian action was based. The Shell Man selected a card and laid it out. Lee played in turn, whereupon both players picked up their cards and returned them to their hands.

This process was repeated, after which several variations of the same basic process were performed, and Jennifer, despite her untenable position, found herself wondering about the game. At one stage of the play, Lee had only one card in his hand, the Martian holding all the rest. But whether this was good or bad Jennifer could not determine, because neither player gave any sign.

Then the process reversed itself and the twenty-six cards save two, were reposessed by Lee.

Jennifer found herself almost admiring the man. Neurotic, unstable, without ethics though he was, Lee had a brilliant mind. This game had all the earmarks of complexity. Several times the Martian paused to study carefully before he made a play. But Lee Tarp was never at any great loss. He played quickly and, Jennifer suspected, brilliantly.

The watching Shell Men followed the game in tense silence. Short ex-

clamations—words in an alien tongue—escaped at times from the lips of the least self-contained of the waiting circle.

Time passed. The game—whatever manner of game it was—seesawed back and forth. But always, Jennifer sensed, with the Martian on the defensive.

But now Jennifer lost interest in the game. This occurred when two of the Martians left the circle and came slowly in her direction. A pinch of panic touched her mind. The Martians came closer, squatted on their shell-covered haunches, and peered into her face.

Her panic brightened now. Trussed and gagged as she was, with her ankles bound and her wrists tied behind her back, she was helpless to put up any show of resistance. Only her heels were free, and these she beat on the steel of the corroding floor.

But no results were achieved, because one of the Shell Men reached out with a horny hand and put a stop to the beating. Jennifer screamed, agonizingly, silently, deep in her muffled throat. But she could not pierce the aura of deep attention surrounding the card game. She was entirely at the mercy of the two Shell Men.

They did not appear to be bent on any harm, however, and Jennifer came to the conclusion their actions were motivated by sheer curiosity. They were incapable of expression, the immovable shell of their faces acting as perfect masks.

Hard, platelike hands passed over her hair as she stared into the yellow eyes behind the plastic shields. Martian fingers pushed and probed at the flesh of her face. Her ears came in for a fair share of inspection and one of the Martians became bent upon investigating the shape of her

leg beneath the bulky space suit.

JUST HOW far the manual inspection would have gone Jennifer was never to discover, because at that moment a cry of triumph from Lee turned all attention back to the game. The two inquisitive Shell Men hurried back to the circle where Lee was giving every indication of having won.

Jennifer breathed a sigh of relief. She turned her own attention back to the gamblers and wondered by what process Lee had won. He now held thirteen cards, as did his Martian opponent.

But both players threw in their hands. "Twelve portals," Lee crooned in his native tongue and-reaching forth—he drew both his own stake and those of the Martians to his side of the circle.

But the game, it seemed, was not over. From incredibly well-hidden pockets, the Martians came forth with another pile of nuggets—a pile almost double the size of the one now in Lee's possession. Lee grinned and pushed forth his own original stake.

The Martians demurred. Whether Lee understood the rapid gutturals shot at him from all sides, Jennifer could not tell. He frowned, indicated his bag, and pushed it forth with what was almost a belligerent gesture.

The Shell Man with whom he had played cards came erect and reminded Jennifer, in passing, of the ancient prints she had seen depicting the American Indian, that long-gone first citizen of the North American continent. Such was the Martian's stolid dignity as he stood there with folded arms.

Lee got up also and gestured his question by turning palms up and shrugging his shoulders.

The Martian spokesman had evidently been told the decision of his followers. And that decision had no

doubt been arrived at by the two Shell Men who had inquiringly prodded Jennifer's physical being. The Martian turned and pointed a finger at her; then back at Lee's original stake. He made himself entirely clear. They wanted both items placed against the larger pile of nuggets.

Lee scowled and spoke with indignation. "Nagat! Nagat! Nagat!" His manner indicated the word meant the negative; that he refused the bet.

The Martian shrugged. He made a sign to his followers and they silently formed a line and began retrieving their nuggets.

A WAVE of thankfulness swept over Jennifer. But her gratitude began slowly to congeal as she caught Lee's eye. She saw him look with eagerness at the pile of nuggets; saw the sullenness, the regret, with which he watched the pile diminish.

Then he turned his eyes upon Jennifer and she could sense the avaricious workings of his mind.

No—no.

But it was only desperate wishful thinking on her part. With a revulsion almost akin to sickness, she watched Lee gesture toward the silent Martian leader. His motion of acceptance was fully as eloquent as had been that of his first refusal.

The Martian nodded, emitted several gutturals, and the line reversed itself. In a matter of moments, the game was under way.

In order to occupy her agonized mind, to keep down the waves of sickness, Jennifer sought to follow the game. It progressed in crackling silence, and she believed she discovered the method of acquiring what Lee had termed a portal. Like a miser counting pennies, she kept track of the portals gain by Lee Tarp; she balanced them against the ones gotten by the Martian. She prayed as the tide

of fortune swung back and forth.

But, gradually, Lee gained an edge. Then it came. The moment of triumph. Lee's twelfth portal! Jennifer went weak from relief. Now—if the Shell Men had been divested of their last nuggets—

But the sickness and terror welled anew in Jennifer's heart. She had been wrong. She had not divined the intricacies of the game at all. The look of bitter frustration on Lee's face—the glad gutturals of the Shell Men—told her the awful truth.

Lee had lost the game.

JENNIFER'S world came to an abrupt end as the Martians—having finished dividing the bag of sugar and retrieving their nuggets—gathered around to inspect their human prize. Inquisitive and appraising fingers probed at the flesh under her heavy suit. Remarks were passed back and forth, and Jennifer was grateful for her lack of understanding.

But now she gained a respite, however brief it would be, when Lee pushed into the group of Shell Men and addressed the leader. His harangue was done mainly in pantomime with a few words of both languages thrown in. Not enough words, however, to give Jennifer any inkling of Lee's subject.

She got the impression, from both his manner and that of the Martian, that Lee was reminding the latter of some obligation unfulfilled. The Martian finally got Lee's meaning and addressed his own people in the guttural which was becoming familiar to Jennifer.

There was a chorus of agreement from the Shell Men, who went into immediate action. A pair of them lifted the now-helmeted Lee, who clung tightly to his bag of nuggets; another team did the same with the apprehensive Jennifer, and the group went fly-

ing off across the dark plain.

As they traveled, the two moons came up into the Martian sky, giving light to the weird group that sailed over the short fuzz-bush.

Jennifer, dazed by the abruptness of the affair, became conscious of Lee's voice speaking through her radio. "It's all right, darling. There's nothing to be afraid of. I have a plan; a plan that will win us freedom and wealth. We're going back to Earth, Jen! You and I! And we're taking enough gold with us to buy half a city. Trust me, darling!"

But Jennifer, beaten down mentally and physically, didn't care any more. Nothing much mattered except that this mad nightmare have an ending. Any kind of an ending. Just so this madness be finished.

Where was Barry? Where was Sam? Was she beyond reach 'of their aid? Evidently she was. Now only two possibilities remained for her. A trip to disaster in a space ship with a madman, or some horrible obscene fate with a group of bulge-eyed monstrosities.

There was only one consolation. She wouldn't be called upon to make a choice. She would not be consulted.

Time passed, with her sated mind unable to marvel at the speed and ease with which the Shell Men flew across the plain. Then the form of a bright new space ship loomed ahead. *Voyager Three*, waiting where they'd left it; waiting to carry someone into the sky. And *Voyager Three* didn't care who.

In case Lee's plan failed, would she become the wife of a single Shell Man? Or the playmate of a dozen? It was no use wondering. Only time would tell.

The mad race ended as abruptly as it had begun when the group came abreast *Voyager Three* and stopped on the port side of the tail assembly. Lee Tarp snapped open a small niche, flush with the hull, and released the outer port-lock. The port swung silently inward. The ramp came down like a tongue bent upon tasting the fuzz-bush.

Now Lee moved swiftly. He caught Jennifer's arm, turned her sharply and pushed her toward the ramp. "Inside the ship, quick! You didn't think I was going to leave you with these monsters, did you?"

The Shell Men seemed puzzled; but only momentarily. With Lee and Jennifer halfway up the ramp, they sprang forward in concerted movement. Guttural words of surprise and anger filled the air.

Lee had thrown off his helmet and he now had a gun trained on the Shell Men. "Stand back, you stupid idiots!" His words were not understood, but the Shell Men associated the hand gun with violence. Some of them had been present at the gambling where violence had been done. Their reluctance to move forward had its effect on the others.

Lee grinned. "I knew you'd be smart about it. You saw what this gun did before. Anybody like to try for more?"

Jennifer, though dazed, got the impression Lee would have liked an attempt at interference from the Shell Men. There was a baiting tone in his voice as he pushed her back through the port.

The Shell Men did not come forward. They stood talking among

IDLY, JENNIFER sought to define this action of being carried across the plain. Evidently, she surmised, the Shell Men had agreed to deposit Lee at the space ship, regardless of the outcome of the weird card game. They were keeping their promise.

Jennifer's mind wandered further.

themselves in low gutturals. They watched Lee push backward into the ship after Jennifer.

"So long, suckers," Lee Tarp sneered.

"A NEW AND rather picturesque appellation," Jorgman said. "I never heard it before."

Both Lee and Jennifer whirled to see Jorgman, the two Earthmen, and several Martians waiting inside the ship. Now there was quick, decisive action. Two Shell Men leaped forth to disarm Lee. Sam and Barry sprang from the group also, but to catch Jennifer, who seemed ready to fall; to remove her helmet, the gag, the thongs from her wrists.

Barry glowered darkly at Lee—a look not missed by Jorgman, who said, "I would suggest you restrain your natural impulse to do your compatriot bodily harm. Violence is shunned on this planet and there has been far too much of it already."

Lee was struggling in the grip of Shell Men. "What kind of rotten trickery is this? You've got no authority to hold me." He directed his words at Jorgman, who dominated the scene by merely standing with his arms folded. "You have no right to restrain any of us. It will be taken as an unfriendly act by our government."

"I'm afraid," Jorgman said gently, "that too much credence cannot be given to your statement. An alien is required to obey the laws of the land he enters into."

"What are you doing here anyhow?"

"After you kidnapped your female companion, we felt this was the point at which you would eventually arrive."

Jennifer was in Barry's arms, crying softly, her head on his shoulder. "He—he used me as a—stake in a card game," she sobbed. "He lost me

to the Shell Men."

Sam took a menacing step forward. "Good Lord!"

"An unfortunate thing for Mr. Tarp to do," Jorgman said. "Pardon me a moment."

Jorgman turned to a duo of the Shell Men who stood a little apart from the others. This pair had no distinguishing marks other than possibly the haughty tilt of their heads. Jorgman spoke to them in the low, swift guttural of the race.

The Shell Men held up their end of the conversation, their blank expressionless faces upon Lee Tarp. After a few moments, one of these leaders addressed his fellow Martians in a louder tone.

Jorgman turned to Jennifer, smiling gently. "You may consider the incident closed, my dear. I explained that Mr. Tarp had no right to put your person up as a gaming unit. You do not belong to him. The Martians took it for granted you were his wife. Your status is now cleared—but I'm afraid that of Mr. Tarp has worsened."

"What will happen to him?" Jennifer asked.

"They are more determined than ever that he answer for his crimes. The worst of these, of course, was the violence. But to gamble with property not your own is almost as grave an offense."

SAM WALDEN spoke for the first time: "You don't actually mean Lee will be killed! It's hard to conceive of a race so vindictive—"

"Mars is almost entirely free from crime," Jorgman said. "Perhaps that is the reason."

"But you said something about a trial," Barry reminded.

Jorgman sighed. "Yes. The Shell People recognise the principal that a man should be punished by his own race. Therefore, they have turned the

prisoner over to me for trial—and possible execution."

"What sort of a trial will be staged?"

"A game of cards," Jorgman murmured. "I will engage your Mr. Tarp in a set of *gannota*. If he wins, the Martians will agree to give him his liberty."

The Earthlings stared incredulously. Sam Walden voiced their sentiments: "A method so crude! It's—"

"Amazing?" Jorgman asked. "You are on Mars now. This method of trial has gone on for hundreds of thousands of years. In the long run, I imagine, it averages out."

Already, the Shell Men had formed the circle. Lee's guards hauled him across the floor and pushed him down opposite the already seated Jorgman. Lee grinned. "You could have relieved my mind by telling me about this sooner. I knew there'd be some sort of a trial, but—"

"Do not allow your confidence the upper hand," Jorgman said. "It is the contention of the Martians that the gods of justice now rule the cards. "Also," he added, "I am considered an excellent *gannota* player."

Lee's face darkened. "You don't mean you'd actually try to beat me—"

"I will assist the gods by playing to the best of my ability."

A dealer had been appointed by the Shell Men. He shuffled the deck and allowed each player a cut. He dealt two hands of thirteen cards, then laid the deck out in plain sight and folded his arms.

"In the case of a trial game," Jorgman said, addressing Lee Tarp, "each play is called orally. It is the custom. Are you familiar with all the plays? Are you able to interpret them into your own language? If not, I am at liberty to appoint—"

"Let's get on with it," Lee said.

"I've learned my way around."

"In that case, please select your channel."

LEE STUDIED his hand. He had a choice of eleven different channels. Each channel gave a different set of values, even names to the cards. By correctly evaluating his hand, and transposing the values, he could gain a possible advantage in strength.

"Planets," he said.

"Thank you."

"I advance toward the fourth portal."

Jorgman raised his eyebrows. This was a daring move at the beginning of the game. "I am required to warn you," Jorgman said, "that your life is the stake in this game."

"Play cards!" Lee snapped.

"Very well. I introduce the three of Saturn." He laid a card on the steel floor.

Lee smiled; a smile of confidence. "I intercept with the jack of planets." He laid down a card also, whereupon Jorgman placed another card from his hand onto the floor and Lee picked up all three.

"You realize, of course," Jorgman said gently, "that you have lost the game."

Lee jerked his eyes upward, startled. "That's absurd. In three more meetings I gain my portal."

"But in eight meetings you will have advanced only to the sixth. Your strength will have been used. You will remain at six while I defeat you."

"Play," Lee said grimly.

"I return with a Venus meeting. The nine. I declare for one portal."

In this exchange, Lee's hand increased by four cards.

A deep silence had fallen over the game, broken only by the brief declarations of the players. The cards moved back and forth, none of the

Earthlings, save Lee, able to draw the vaguest conclusion as to which player fortune favored.

Not until, some time later, they saw the beads of sweat on Lee's forehead; heard him mutter: "You can save me. Only a small slip they wouldn't notice. In God's name, don't send a countryman to die."

"Cheating of any sort," Jorgman said, "is a despicable crime on Mars."

"But it isn't fair. You play better than I do. I didn't have a chance."

"On the contrary, you have a brilliant mind. We are evenly matched. My experience—your genius. We differ only in that you risk all on one card. I play cautiously."

LEE'S JAW tightened. "And I'll still gamble. Select your card."

Jorgman nodded. This, one way or another, would be the finish. He drew a card from his hand. Lee studied its back as though striving to see through it.

"I advance to the ninth portal," he said. My weapon is lord-card of the seventh planet." He laid forth a card.

"The gate is closed," Jorgman replied sadly. "Your jack of planets, like an old sin, returns to confound you." He laid a card on the floor. "I enter the twelfth portal."

Lee appeared to be choking. He raised stricken eyes to Jorgman. "Do not close the gate," he whispered. "Do not take a countryman's life."

Jorgman sighed deeply. "The gate is closed."

"You devil!" Lee lunged across the intervening space toward Jorgman, hands clutching at his throat. Two Shell Men dragged him back and to his feet. Jorgman came erect, smiling with his eternal gentleness. "I think our affairs here are completed."

"When and how does the execution take place?" Lee asked quietly. He had quit struggling with the Shell

Men. The spirit seemed to have gone out of him.

Jorgman's answer was only a partial one. "Immediately. The execution chamber is underground, beyond your apartments."

"Who—performs—?"

"I do," Jorgman said. He sighed. "I have become quite adept at it."

Jennifer was still within Barry's encircling arm. "You mean you have executed other—Earthlings."

"Yes. But now I suggest we go on our way."

As they hauled Lee from the ship, he turned with a snarl on Sam Walden. "You're going to let them do this to me? What kind of a friend are you? What kind of a leader?"

"Just a moment," Sam said, speaking to Jorgman. "There are certain points in Lee's favor in this matter. One in particular that you yourself have accepted."

Jorgman's smile was bright—questioning. Sam went on: "The Shell Men have turned Lee over to you for the carrying out of the sentence on the theory that he is of your people. On that same basis, I ask that you turn him over to me. We will return to Earth and see that he is tried in Earth courts."

"Do you *wish* to return to Earth?" Jorgman asked the question suddenly, catching Sam off balance. The latter hesitated for several moments. "That is neither here nor there."

"I take it," Jorgman pursued, "that you don't think the sentence just."

"I think it's too severe."

Jorgman sighed. "I'm afraid I must over-rule you. I must take into consideration the Shell People and their ancient laws. I must not disturb the *status quo*. I will do nothing to risk disturbing our admirable relationship with them."

"In that case—" Sam never fin-

ished his sentence. Nor did he get the gun from his pocket. Two of the Shell Men moved with the speed that characterized them. Another pair took swift charge of Barry, and the two Earthmen were helpless.

"I must apologize for the seemingly inhospitable actions," Jorgman said, "but I may have saved you from an error you would regret. Shall we leave now, gentlemen?"

THREE SIX Shell Men handling the Earthmen constituted also the representative witnesses of the execution. In grim silence, the cavalcade entered the spinelike building, passed through the apartments given the quartette upon their arrival, and repaired to a small, bare room beyond.

Jorgman crossed the room and opened the door to a small booth. They saw what was inside and Jennifer, pale and shaken, exclaimed, "An electric chair!"

"A form of one," Jorgman said, and they watched as the Shell Men strapped Lee into it.

Lee had dredged up a surprising amount of moral strength. He was silent, grim, unbegging, as the strapping down was completed.

"It's wrong—wrong!" Jennifer whispered. Barry reached out and took her hand. "Maybe we can even things up later," he muttered.

With surprising callousness, Jorgman closed the door of the chair-cell and threw a switch on the wall.

"Wait—wait! Let him say a prayer, at least," Jennifer pleaded.

But it was apparently too late. A high keening noise was heard, after which Jorgman opened the door. Lee hung loosely against his bonds. The Shell Men, on a motion from Jorgman, gathered around the chair. Then, satisfied, they stalked silently away.

Jorgman, alone with his Earth guests, smiled brightly. The callous

execution had numbed them. They stood frozen as Jorgman again closed the door and threw the switch. The high whine of hidden mechanisms was heard again. Now Jorgman again opened the door.

Lee had vanished. The chair was empty.

"Your compatriot is not dead," Jorgman smiled. "He has been back on Earth for several months now."

The three Earthlings stared. "A space-time machine!"

"Exactly. And I know you'll pardon an old man his little dramatics. This is of course the reason we allow the space ships to rot away."

LATER, Jorgman said, "I was miserably with my information because I wanted a chance to watch and study you. We need recruits for our Martian world, but they must be the right type; that is important. Lee Tarp obviously was not the right type. So his deportation served two purposes: it satisfied the Shell People of his death, and got him back to his planet."

"We haven't indicated that we wish to stay here," Sam said.

"Nor would I ask any hasty decision. There is plenty of time." Jorgman paused to smile. "And now, are there any questions?"

THREE FOUR space candidates selected for the Martian trip on *Voyager Four* were receiving a final briefing from Colonel Hardy.

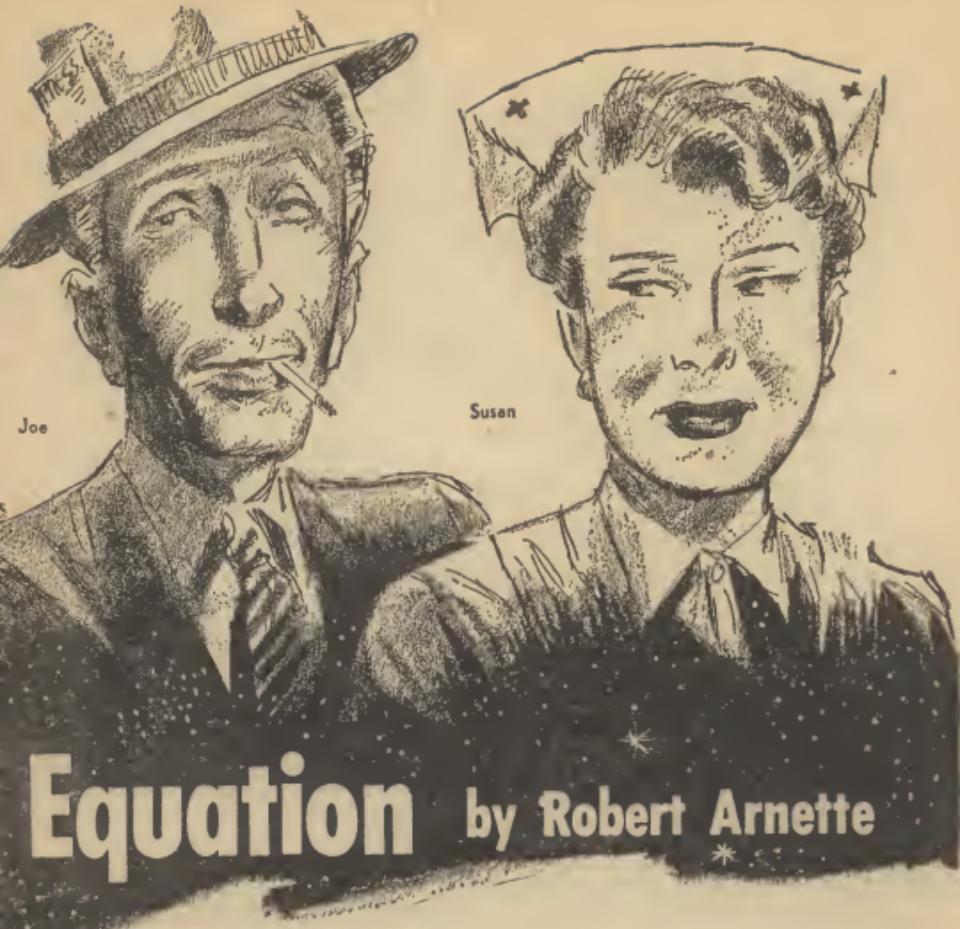
"And in the case of *Voyager Three*," Hardy stated, "I must tell you this: One member of the crew was found, six months after the blast-off, dealing poker in an Arizona gambling house. He, like the others before him, had no recollection of ever riding a space ship."

"Now, one of your important jobs will be to find out."

Jerry

Kathy

The Unfinished



Equation

by Robert Arnette

**Why should we attempt to conquer space? If
we wait long enough, it's sure to conquer us**

SORRY. I can't take time to talk to you fellows now." Dr. Jerome Hanes shouldered his way gently through the crowd of reporters, blinking his eyes against the successive flashes of glistening-lensed cameras.

He reached an open space and strode toward the waiting official sedan that would speed him away. Behind

him the huge spaceship rose like some futuristic skyscraper, its needle nose three hundred feet above its launching base.

The reporters remained respectfully where they were, letting him depart—except for one. Giving the others a high sign to leave the field to him, he hurried after the scientist and fell into step beside him.

"Please, Dr. Hanes," he pleaded. "We'd like some sort of human interest slant for our readers. Anything will do. Who do you think will win the series tomorrow, the Cubs or the Dodgers?"

"Baseball?" Jerry asked, smiling tolerantly. "Lord, I have no idea. Used to play ball when I was a kid, but I have no interest in the game now."

"Well, make a guess," the reporter asked desperately. "Your guess will be as good as anyone's."

Jerry thought quickly as he strode toward the sedan, then paused. He knew that right now he was the most newsworthy figure in the world. If he gave an opinion it would be on the front page of every paper in the country. Inspiration touched him at the last instant.

"Tell me," he said, "where is this game to be played?"

"In New York," the reporter answered.

"Well," Dr. Hanes said, relaxing his tense features in a smile. "My prediction is that the game will be called off on account of rain." He added hastily, "They do call off baseball games if it rains, don't they?"

"Yes," the reporter said, opening the car door for him. "And thanks."

Jerome crawled into the car and dropped wearily beside Kathy, who immediately took possession of one of his arms, clinging to it as if by doing so she could gain the confidence her face couldn't quite assume.

He gently but firmly rescued his arm from her, smiling sympathetically at her upturned face. "Everything's ready," Jerome said, leaning back and closing his eyes. "The ship can take off tomorrow at 9:46 on schedule."

"With you in it," Kathy said, her lip trembling. "Oh, Jerry, I wish you weren't going. I'm so worried."

"Einstein's last equation, I sup-

pose," he said wearily, not opening his eyes.

"You're as worried about that as I am," Kathy said. "In fact, if it weren't for that equation, they could let some volunteer go instead of you."

"I know, I know," Jerome said irritably. Sometimes he distinctly disliked this overintelligent female assistant of his. "If Einstein's last equation is correct, there isn't any Moon, and if there isn't, a trained scientist will have to be on the ship to handle the emergency. If Einstein had only lived another year he would have cleared the problem up. But then, if Newton had only lived another year, from what we've recently uncovered, all of Einstein and Fitzgerald would have come two centuries before it did, and this first trip to the Moon I'm making tomorrow would have been made in the eighteenth century instead of almost the twenty-first."

"I wish I were going along," Kathy said.

"I would like nothing better," Jerome lied, secure in the knowledge that she wouldn't be.

THE SEDAN pulled up in front of the Government building and the two got out, walking up the long shallow steps to the entrance side by side. A moment later they were in the office of the man in complete charge of the spaceship operation—Major Poinard.

"Everything's ready, Major," Jerome said, laying the sheaf of notes he took from his pocket on the desk.

"Not quite, doctor," the Major said. "A minute ago the new generator arrived. It's a hundred and twelve pounds lighter than the one in there, and has a twenty per cent greater overload capacity. There isn't time to compensate for the lighter weight so we are allowing Miss Green's request to go along to be OK'd."

"Well," Jerome said, inhaling slowly and deeply, "that's wonderful. Yes, that's fine." He pasted a smile on his lips and veiled his eyes as he turned to face her glowing happiness.

"Both of you report to the hospital," the Major went on. "They have orders to see that you get a good night's sleep and arrive at the ship tomorrow properly dosed up to stand the acceleration you'll be subjected to. Stuff developed for jet flight..."

"I didn't know you had put in a request to go along," Jerome said when he and Kathy were alone in the hall. "It's—it isn't—"

He gave up trying to find words to express his thoughts. Words that could be used.

"Why Jerry!" Kathy said. "If I didn't know you better, I'd think you were being selfish and wanting all the glory for this trip to yourself. Why not be a good sport and take things as they are? When I didn't know I could go, I took things as they were. I did as much work on this as you did. Yours was to be the glory and the fame. Mine just to be a forgotten assistant. You should be glad I'm going."

"That's the trouble with you," Jerome groaned. "You're not only the perfect assistant, but womanlike you place me in the position where if I do what I should, I'm doing it by following your orders rather than my own impulses."

"Sorry," Kathy said, biting her lip. "I talk too much."

"You certainly do," Jerome said, holding the door open for her to pass him. And as they descended the steps to the sedan, "I'm going to tell you just what I would tell a man assistant. Keep your mouth shut except when I want your advice. I'm going to have to have a calm mind on this trip, with my judgement unclouded by irritations."

He held the door of the sedan open for her, and when he climbed in and sat down beside her he sat erect, a stern frown on his face.

SHESAT huddled up in the far corner of the seat, a figure of utter dejection. From time to time as the car sped smoothly toward the hospital her eyes, large, round, and soft, looked at him pleadingly.

"Jerry..." she dared to say finally.

He turned blazing eyes on her. "Look, Katherine," he said. "I've given away my feelings this far. I might as well go the rest of the way."

"Yes?" she said, her face lighting up with a hope that was wiped off at his next words.

"For three years you've been my assistant," he said. "In that period, time after time you've gotten the answer to a problem just before I would have if I'd had a chance to finish it. You've been an assistant, yes. But you haven't confined yourself to the job. You've done everything you possibly could to make it personal, divert my attention to you, distract my thoughts. You've pointed out to my superiors the problems you solved and I didn't. You've used other underhanded methods that wouldn't be tolerated for an instant in a man. You long ago maneuvered me into the position where to fire you would be personal spite, rather than the calm judgement that you weren't suited to your work. This final act, to ask to go along without even telling me you had done so, nor caring about what it would do to me, is the last straw."

His blazing eyes encountered only the rich chestnut waves of hair of her bowed head. "There are men," he went on, "good men, better in some cases than their bosses, who go all their lives keeping their mouths shut, doing their job. Bosses look for men like that, who are capable of doing the

job right. But you! Do you think there aren't plenty of other people who could have solved those details you were so proud of solving? And who would never have thought of using those picayunish successes to stab their boss in the back? You make me hate all women. I think I hate you more for that than for yourself. If I ever find a girl I want to marry, I'll see you in whatever faults she has, and it will be like mold in a mouthful of chocolate pudding I had a couple of weeks ago. That used to be my favorite dessert, and now I can't touch it any more.

"From the very first day I met you you've been like that. Sure, I felt thrilled to have a good looking girl for an assistant. For the first few weeks as you demonstrated your obvious ability as a mathematician, I felt more and more thrilled. I thought I was very lucky." Jerome laughed bitterly. "Then came that first time I had to shrug off something you did as being excusable because you were a woman—"

“YOU’VE GONE far enough," Kathy interrupted, raising her head to reveal an altered face, her own eyes now blazing. "Now I'm going to tell you something." Jerome stared at her blankly, his mouth still open, then turned stonily to look out the window.

"From that very first day," she said, her eyes boring into the back of his head, "I fell in love with you. Do you know what that does to a woman? All through college I turned down dates so I could study and become a top mathematician. I turned down proposals of marriage so I could work on this job. I'd never met you. Frankly, if I'd met you in college and you'd asked me for a date I'd have said no. But you were my boss. Quiet, modest, with a thoroughly capable mind. A

trifle stupid in some things. More than stiff and clumsy from the social standpoint, but with a grin that made me forgive and forget your bad points.

"For two years I've devoted my life to your interests. I've breathed, eaten, and slept my job, because everything I did was for you. Some of the time I kidded myself that it was for personal ambition. But underneath, I knew it wasn't. It was to make you big and wonderful, so that when you got enough sense in your head finally to ask me to marry you I could say yes and retire to a home where both of us could discuss your problems as a scientist, and I could always feel that I was a real help to you."

She stopped talking for a moment, her expression altering.

"I can tell you this now," she went on in a quiet voice, "because it's all over. I see you now just as you really are—a stupid, bitter, selfish, small person. You haven't the grace to be human. You haven't the sportsmanship to accept anything gracefully that you don't like. If Einstein's unfinished equation proves correct, you're going to be in a spot even with me along. I'm going to use every advantage I can grab to show you up to the world. I know you better than you know yourself.

"Do you want to know why I asked to go along? It was because I felt that you'd turn out to be a snivelling coward out there. I wanted to give you courage and calmness. I wanted to be your strength. But now I'm going to let you show your streak, and then I'm going to do what I would have done for you, strictly on my own.

"Every word we utter in that ship will be radioed to Earth so they can know to the very end what happens if we don't come back. They'll know what you are."

Jerome had turned to look at her,

a light of cold, amused contempt in his eyes. *

"Even in this you are working the cheap, unfair tactics of the female," he said quietly. "What you've just said is that I'll be afraid. Of course I'll be afraid. But you've said further that you're going to use every device at your command to make me out a coward just because I'll be afraid. All right." The sedan was slowing to a stop at the hospital. "But just remember this: you're going to have to live with that cheap little soul inside you, sweetheart."

He climbed out as the car stopped and held the door open with elaborate politeness as she climbed out. Together they walked up the steps into the hospital.

"THROUGH that door over there," the girl behind the counter said, pointing. "Dr. Beaumont is waiting for you."

They passed through the door into the odors and subdued noises of a typical hospital corridor. Twenty feet away was a small desk. The nurse sitting behind it with her chair crowded to the wall looked up as they advanced toward her, her face brightening in recognition.

"Oh, Dr. Hanes." It was a statement of fact. "And the Major called up a minute ago and said you were going on the trip too, Miss Green. Congratulations."

"Thank you." Kathy's voice was almost inaudible.

The nurse was rising as she talked. Now she led the way down the hall to where it met another at right angles. Jerome and Kathy followed her, their heels pounding the marble floor sharply in the silence.

They turned in through a door marked, "Dr. J. G. Beaumont, Private." The man who rose to meet them was middle aged, with a

pleasantly stern countenance and an air of confidence inspiring capableness.

"Hello," he said, shaking hands with them. His eyes studied Kathy sharply. "Hmm," he hummed, searching for a pulse in her wrist. "You are going to need a little quieting. You're breathing like you'd been running all the way over here. And if I didn't know what caused it I'd say from the rapidity of your pulse that you had a very dangerous form of heart trouble."

He released her wrist and motioned for her and for Jerome to sit down. "But we'll take care of all that," he continued after they were settled tensely on the edges of their chairs. "You'll have the worst of it, Miss Green. You haven't had time to prepare emotionally for the journey away from the Earth.

Kathy bit her lip and said nothing.

"And you, Dr. Hanes?" Dr. Beaumont asked, turning to Jerome. "How do you feel?"

"Like backing down," Jerome said with a tight smile after a brief hesitation.

DR. BEAUMONT returned the smile. "If you didn't, there'd be something wrong with you," he said. "In the morning most of that feeling will be gone. We've concocted a nice combination of drugs to use on you. Both of you. I'd like to explain a little about them before we start in giving them to you."

"Do that," Jerome said, leaning forward. "I'd like to know how they're going to act."

"Most of them have a long, a tried history from use on jet fighter pilots," Dr. Beaumont said. "One intricate combination changes the composition of the blood so that the minute vessels that supply your brain will stand more acceleration without danger of rupturing. All the other blood ves-

sels, too. There will still be grave danger of your blacking out that can't be avoided. But that, I understand, will only be during the first twenty seconds after takeoff. After that your acceleration will drop to a safe figure."

"That's right," Jerome said, nodding. Kathy said nothing, her eyes apparently studying the design of the rug on the floor.

"After that," Dr. Beaumont went on, "your greatest danger as we see it is from your emotions. We're attacking that from two directions. First, you will have a drugged sleep tonight that will iron out a great amount of the emotional stress you experience right now. We can't afford to chance your having a natural sleep. Along with that, we're going to give you each the first shots that will begin to stimulate your awareness to almost superhuman sharpness tomorrow during the trip. Drugs similar to marijuana but with less harmful side effects than that drug.

"And now we come to the only really new thing we're going to do to you. We're going to administer local anesthetics to certain of your glands that stimulate and augment emotional states. One of them is the adrenals. They won't be anesthetized until shortly before you are to start, and not until the sugar content of your blood is way down.

"You're both going to suffer extreme pangs of hunger during the trip without daring to do anything about it. But also you're both going to be emotionless machines. Pure intellects capable of acting calmly even if you happen to become mortally wounded.

"We're timing everything so that two hours after takeoff your drugged condition will begin to wear off. It will wear off very slowly so that your minds will have time to adjust. Ac-

tually we should keep you drugged for the entire trip, but the high command insists, perhaps rightly, on a chance to study your emotional reactions to outer space. So we must give your emotions a chance to wake up and be affected by their environment in space.

"And now," Dr. Beaumont said calmly, "if you'll follow Miss Graham, the nurse, she'll show you to your rooms. I'll be in to see each of you shortly after you're settled."

"**Y**OU GO in here, Miss Green," the nurse said, stopping before an open door.

Kathy entered the room without looking toward Jerome. He watched her, his features expressionless, then followed the nurse to the next door. Evidently he and Kathy were to be in adjacent rooms.

"Take off all your clothes and put on the robe laying on the bed," the nurse said, smiling politely.

"Thank you," Jerome said absentmindedly.

He entered the room. There was a hospital bed. It was a typical private room in a hospital. He did as the nurse had ordered, then climbed into the bed, lying on his back and closing his eyes.

He felt, suddenly, infinitely tired. Too much had happened. At the very moment when he should be completely free from worries and troubles he found his world falling around him, the very meaning of existence gone.

Something had gone off the track somewhere. Maybe it had gone off the track a long time ago and he had just begun to realize it.

In the morning, just a few hours ago, everything had been simple. He had been sort of in love with Kathy, maybe. He wasn't sure now whether he had been or not. He had half entertained the silly notion of marrying

her when he came back from this trip to the Moon. If he did come back.

But now? A bitter smile emerged onto his relaxed face. Kathy's pretty legs would take the place of his picture in all the newspapers. Already, perhaps, they were killing that crazy reporter's story on how he had predicted that rain would prevent the world series game tomorrow, and putting in its place the more newsworthy news that Kathy was to make the trip to the Moon with him.

Everything had changed with that. He was just the chauffeur now, and Kathy was taking the trip to the Moon. That's the way the public would consider it. And the reporters.

Those silly ideas of marrying her after it was over would be out now. Even aside from the fact that he had said things she would never forgive or forget.

There would be movie contracts for her, lecture tours, a professorship in any university she wanted.

Jerome sighed deeply. "To hell with Kathy," he decided.

"Asleep already?" a deep voice broke into his thoughts. He opened his eyes. It was Dr. Beaumont.

"No," Jerome said, his weariness showing in his voice. "Just thinking," he added truthfully.

A WHITE uniformed orderly wheeled a table with steaming food on it into the room.

"Your last meal until you're out in space," Dr. Beaumont said, smiling. "While you eat I'd like to talk with you, if you don't mind."

Jerome nodded his consent.

"This whole thing intrigues me," Dr. Beaumont went on. "I've read everything on it, and still can't understand much. The thing I can't understand is that in some quarters they seem to think maybe there won't be any Moon out there. Can you

enlighten me on that?"

"A little," Jerome said looking over the dishes of food interestedly, beginning to feel hunger. He ate a bite of the tender porterhouse steak before continuing. "Just before Einstein died, he was working on a new equation in his unified field theory. It had to do with relating space-time to Euclidean space and a time parameter. It had brought out some incredible conclusions and he was part way through trying to get away from those supposedly absurd conclusions when he died.

"The main thing about them that was so absurd at the time was the conclusion that the Earth's space-time field would have a Euclidean diameter of less than four hundred thousand miles."

"I don't understand," Dr. Beaumont said as Jerome paused to eat another bite.

"I can explain it best this way," Jerome said. "The ship won't travel in Euclidean straight line paths, nor even in Euclidean space. It will travel along space-time geodesics. That means that so far as the ship is concerned, two hundred thousand miles straight up is light years away.

"But that isn't the main trouble. After all, that's purely relative. The main trouble is that those same equations seem to prove that if the Moon actually exists, it would tighten the space-time field to such an extent that the Moon, rather than being up in the sky, would have to be inside the Earth! In other words, the position the Moon seems to occupy is in reality an imaginary position. That goes for the Sun and the stars, too."

"The Moon inside the Earth?" Dr. Beaumont echoed, puzzled.

"No," Jerome said, shaking his head. "That's impossible. That's merely what Einstein's unfinished equation says. What it actually

amounts to, as we have found by trying to carry on the work of interpreting that equation, is that the Moon and the Sun and the stars don't exist at all. They are just patterns in which the light rays originating on the Earth itself return in their circle through space-time."

"Then what do you expect to find out there?" Dr. Beaumont asked.

"We expect to find the Moon, of course," Jerome said. "But we also know that according to the theoretical picture we have gained from the latest and most refined experiments, there is a very good possibility that we'll find the Moon a mirage. In that case there's no telling what may happen because, you see, the ship itself will follow different space-time lines than light, and may be able to escape the Earth's field."

"Do what?" Dr. Beaumont asked, apparently lost.

"This is what might possibly happen," Jerome said, sitting up and using his fork as a pointer to emphasize his words. "From telescopes following our progress, it may seem that we continue to gain speed and distance at an incredible rate. They may see us reach the moon and go past it an hour after takeoff, and continue outward into space, reaching the nearest stars in a couple of hours. But long before that the ship will be too small to see any more.

"To us on the ship it will seem that the Moon sort of loses shape and disappears. The Sun will do the same. So will the stars. Instead of the universe as we see it through our telescopes, we'll begin to see into other—what you might call infinite universes. The space that appears through our telescopes to be countless billions of light years distant."

"I think I begin to understand," Dr. Beaumont said slowly. "We are like a man on a desert who sees the

mirage of an oasis a mile away. You will be like that man if he walked that mile. You'll lose sight of the oasis and see what's really there."

"You've got the idea," Jerome said, grinning. "Except that the man on the desert encounters more sand, while we may encounter things we can't begin to conceive of now."

"NOw," DR. BEAUMONT said when Jerome had finished eating, "we begin our work on you. You'll only be aware of the first of it. The first two injections, to be exact. After that you'll sleep through the rest of it. You'll wake up in the morning, but past experience has shown that with your emotions deadened you'll remember very little of what takes place in the morning. Your mind will begin to remember what goes on after you get about half way to the Moon. If there is a Moon, of course."

"You mean I won't remember anything when I wake up?" Jerome asked.

"You misunderstand," Dr. Beaumont explained. "You'll have your memory all right. What I mean is that twenty-four hours later you won't be able to remember leaving the hospital and boarding the ship. There'll be a two or three hour blank in your memory. I'm telling you this so you won't be alarmed out in space if you can't recall anything after-taking your first two shots this evening."

"I don't know whether I'll like that or not," Jerome said doubtfully.

"It can't be helped," Dr. Beaumont said. "Memory involves the emotions. You'll remember some things, but there'll be gaps. And actually the memories will be there, and could be brought out later by recreating the same emotionless mental state."

The nurse had brought in a tray on

which lay gleaming instruments. She set the tray on the night stand while the doctor was speaking and waited for his orders.

Jerome watched as a spot on his forearm was cleaned with alcohol, the needle was forced in, and a yellowish fluid was slowly injected in a vein.

His last thought was the humorous one that the doctor had been wrong. He would never know when they gave him the second shot! Or had the doctor fooled him....

DR. BEAUMONT felt of Jerome's pulse and listened to his breathing for several minutes after his eyes closed. Finally he dropped the lax wrist and stood up.

"You can continue the injections, Miss Graham," he said calmly. "Come to Miss Green's room after the third one." He glanced at his wristwatch. "That will be in half an hour. Until then I wish to talk with her undisturbed."

The door to Kathy's room was ajar. He knocked at it, looking into the room with a professional smile.

There was a nurse standing beside Kathy's bed talking to her. The remains of a dinner were on a tray beside the bed.

"Enjoy your dinner?" Dr. Beaumont said, pushing the door open and entering.

"Not too much," Kathy answered.

"You may take the tray with you, Miss Larson," Dr. Beaumont said to the nurse.

He picked up Kathy's wrist and watched his wristwatch while the nurse obeyed. When she had gone, his manner changed abruptly.

He dropped the wrist and went to the door, closing it. Then he returned to the bed, eager curiosity on his face.

"How did he take it?" he asked.

"He was quite vindictive," Kathy said calmly. "He's in love with me,

and he had been building up dreams of coming back the conqueror and marrying me and having me settle down in a nice little cottage."

"Of course," Dr. Beaumont said matter-of-factly. "But he still doesn't suspect anything?"

"No," Kathy said. "He thinks I was just being female, to put in to go along without telling him. He was so upset by it that he hasn't had time to think, and," she smiled wanly, "I sort of helped that along by lighting into him."

"Fine. Fine," Dr. Beaumont murmured approvingly. "You've done a remarkable job these past two years. We never thought you could convince him it was he who managed to solve all the problems connected with building the ship."

Kathy chuckled. It was the chuckle of someone recalling happy and treasured moments.

"Jerry has been wonderful," she said. "All along I've been able to make him think everything was his idea, and I just got the answers first." Her tone became wistful. "I'll never forget these two years working with him."

"You're a little in love with him, aren't you?" the doctor said gently.

"A little," Kathy said. "Perhaps more than a little."

"The female is a strange creature," Dr. Beaumont observed. "The rest of us will come out of this with the feeling of a job well done. But you will come out of it with a feeling of emptiness and heartache, because when he finds out the truth he'll hate you."

"I know," Kathy said, looking suddenly years older.

"Miss Graham will be in any moment now," Dr. Beaumont said, his tone suddenly businesslike. "You will be given the same series of shots that Mr. Hanes is getting, but aside from

the first, that merely ensures your getting a good sleep, they will all be harmless. You must remember in the morning to be emotionless. Once in the ship your acting will be over. You know what to do from then on."

"Yes," Kathy said woodenly.

"It won't be so bad after you do it," Dr. Beaumont said sympathetically. "A century or two from now, you won't even be able to recall his name."

Kathy's eyes filmed over with tears. She shook her head slowly in a combination of mute protest and submission to the inevitable.

There was a discrete knock at the door. Miss Graham came in with the tray of hypodermics, ready to begin the series of shots.

SUSAN GRAHAM set the tray down, her face masked and unrevealing. She felt Dr. Beaumont's eyes on her, penetrating, but she was quite sure he did not know she had been outside the door listening.

Miss Green's eyes were on her, too. Susan risked a quick glance at those eyes, keeping her own veiled. What would happen to her if these two knew she had been listening?

She thrust the thought out of consciousness. There was no way of knowing the answer. At least, not yet. Dr. Beaumont and Kathy Green had talked in generalities. Nothing that they had said to each other had been of such a nature that anything could be deduced or even guessed from it. Something was going on, but what?

Kathy Green wasn't going to get the full course of drugs. She was going on the trip with her emotions undened. That could mean that she and Dr. Beaumont knew ahead of time the trip would be harmless to the human mind. That could imply that other trips had been made before, and that implication could go on to the conclusion that Kathy Green and Dr.

Beaumont were in contact with people or other beings who had beat the United States Government to the gun on space flight.

Could it be a foreign government? That was possible. But there were things that pointed toward extraterrestrials, and toward the doctor at least being an extraterrestrial himself.

Susan straightened and stood erect, waiting for the doctor's orders. She wished she knew what to do, who to talk to. Should she go to those in command of this space ship project? They probably wouldn't listen to her, or if they did they might not find anything to substantiate her suspicions.

No. She couldn't go to the authorities. But who could she go to?

Maybe she should wait. Maybe she should see what took place on this flight to the Moon. Maybe what would happen would be suspicious enough so that her own observations wouldn't be needed to uncover whatever was wrong.

Dr. Beaumont glanced up at her and nodded for her to administer the first shot, the only one that wouldn't be harmless water.

He stood up while she was preparing it, and looked down at Kathy Green, his smile kindly and professional for her benefit.

"You will stay awake long enough for the second shot, Miss Green," he said. "I'll see you in the morning when you wake up, though you probably won't remember it later."

Susan was slowly pumping the drug into Kathy's arm when he left. Kathy looked up at her timidly.

"I—I'm a little scared," she confessed.

"There's nothing to be afraid of, Miss Green," Susan soothed. "Now, as soon as I give you the second shot, you can lie back and go to sleep."

She extracted the needle and turned her attention to the tray, pretending to be occupied with the second hypo. A moment later when she turned back to Kathy she saw that she was asleep.

She went to the door and looked into the hall, making sure no one was there. Then she returned to the unconscious Kathy.

With her thumb she pulled back the eyelid and studied the unconscious girl's eye closely, picking up the bed-lamp with one hand and shining it into the eye from various angles.

When she set the lamp down and let the eye close, there was a grim line to her lips. She had the evidence she needed now. Something she could demonstrate to anyone. Evidence that would prove beyond doubt that Kathy Green was not a terrestrial human.

She turned to leave the room.

Dr. Beaumont was standing in the doorway slowly closing the door at his back, a strange expression on his face.

HER BLOOD seemed to freeze in her veins. Then, by a super-human effort of will, she forced herself to behave as though nothing were wrong.

"She's asleep now, Dr. Beaumont," she said, amazed that her voice could sound so calm. She forced a casual smile while the doctor continued to stare at her. "She was a little afraid. I told her she would remain conscious until after the second shot so she wouldn't fight sleep."

Susan stopped talking, holding her breath. Dr. Beaumont was—must be—the same as Miss Green. He wore contact lenses too. Once she had surprised him putting one in, but he had been turned so that she didn't get to see his exposed eye.

What would happen now? What

could she use for a weapon? The hypo needles!

"It's almost time for her second shot," she said, turning casually to the tray and reaching for the longest of the needles. The fixed, casual smile remained on her lips. Her eyes, half veiled, watched Dr. Beaumont.

"Never mind, Miss Graham," Dr. Beaumont said, his voice carrying only a bare hint of sharpness and strain. "Go back to Mr. Hanes. I'll take care of things here." He remained where he was standing.

He wants me to come toward him, Susan thought. What can I do?

She risked a glance at the tray of needles. There was no time to think, to plan. "Oh, that needle," she said in pretended exasperation. Shooting a quick smile at the doctor she explained, "It's one I thought had been thrown away. I'll take it with me and replace it."

Without waiting for the doctor to say anything, she picked one of the six-inch long needles and advanced toward him, holding it so that it pointed forward in her tightly clenched fist.

He opened his mouth to speak, but she was already in front of him, waiting for him to move aside so she could leave. His eyes dropped to the needle, held so innocently and so casually. His tongue flicked out over his lips as his eyes came back to her face, searching.

Then he was stepping aside, his smile disarming, his hands slack at his sides.

WITH HER free hand Susan turned the knob and opened the door, always keeping turned toward him, ready for that quick defensive thrust that would at least make him pause long enough so that she would have a chance to escape.

But he made no threatening move.

The door was open. She slipped through and pulled it shut. She was alone in the hall. Alone except for a man at the far end who was walking away from her direction, probably going to visit some patient.

Suddenly she felt weak. She began to tremble. When she walked her legs were wobbly.

The man at the far end of the hall, seeming to sense her presence, turned toward her. A smile flashed onto his face.

Suddenly Susan had to have someone with her or she would faint. She went toward him. He was retracing his steps to meet her.

She gained strength with each step. Confidence came with it. This man coming toward her was Security. The way he walked, the smile on his face, his broad shoulders.

"Pardon me," he said. "Could you tell me where I could find the nurse or doctor in charge of the two making the trip to the Moon tomorrow? I'm a reporter."

"Thank God!" Susan said.

"Huh?" the reporter asked blankly.

"Let's get out of here. Go somewhere," Susan said urgently, grabbing his arm and walking toward the intersection that led to the front of the hospital.

"What's all this? What's the matter with you? Are you nuts?"

"I'm the nurse in charge of those two," Susan said, "and you're just the person I want to talk to, but we can't talk here. Let's hurry!"

She glanced nervously over her shoulder at the deserted hall behind her.

HER FEET made sharp staccato explosions in the silence as she pulled the bewildered reporter along toward the front of the hospital.

"Act casual when we go through

the reception room," she said as they reached the swinging doors. When he nodded she pushed the door open, releasing his arm at the same time.

There were several people in the reception room. The woman behind the counter was shoving a paper toward a man with his left arm in a sling.

"Sign this," she ordered, then went to the switchboard. "Yes?" Her voice was impatiently questioning in the quiet of the room. "Four three nine seven? I'll dial for you, Dr. Beaumont."

Susan's hand came around the reporter's arm, arresting.

"Wait!" she whispered. Then, going to the counter, "You seem to be snowed under, Mary. I'll take over the switchboard for a few minutes and help you out if you like."

"No, that's all right, Susan," the woman turned her down, smiling. "What, Dr. Beaumont? No, I was just talking to Miss Graham. I'll dial your number now.... I'll tell her."

But Susan was at the front door of the hospital and pretended not to hear when Mary called to her.

"Wasn't she calling you?" the reporter asked as he hurried to keep pace with her.

"Is this your car?" Susan ignored the question.

"Sure, but—" He looked at her, then opened the door to the front seat without finishing his objection.

As he slid behind the wheel and started the motor, Susan seemed to notice the long hypo needle in her right fist. She stared at it, then opened the glove compartment and dropped it inside, slamming the door on it.

"My name's Joe Hargrave," the reporter said conversationally, starting the car away from the curb, glancing at Susan as he shifted gears. "I'm with the *Chicago Journal*."

"I'm Susan Graham," Susan said, looking straight ahead. "I'm the nurse under Dr. Beaumont, in charge of Jerome Hanes and Katherine Green, the two who are going in that rocket to the Moon."

"I don't know what this is all about," Joe Hargrave said, glancing away from the road briefly, at Susan's frown-creased features. "You've been acting like you're afraid for your life. And the way you carried that needle—like it was a weapon!"

"Turn into some sidestreet and park," Susan said, placing her hand on his arm. "I've got to tell you about it—get you to help me."

"Sure," Joe said soothingly, turning at the next corner.

"Not so close to the hospital," Susan said. "Drive farther across town, where we won't be discovered so easily."

"Why not talk while I just drive around?" Joe suggested.

ALL RIGHT," Susan said. But as she began to talk, Joe realized she had been right. He pulled over to the curb and devoted his full attention to her story.

"So Kathy Green has cat eyes," he said slowly after Susan finished. "And Dr. Beaumont may have too. That's something that can be demonstrated. It should be enough to force an investigation before the ship takes off. But what does it all mean? Are they Martians? Somehow I can't believe that. It's too fantastic. Sure, sure, I know they can't be terrestrials. But it doesn't make sense to consider them as non-terrestrials either. Kathy Green has been Jerome Hane's assistant for three years, I think it is. During that time he must have looked into her eyes enough to notice anything different."

"I've been connected with Dr. Beaumont just as long," Susan broke

in. "And from examining Kathy Green's eyes I know you can't see it unless you shine a strong light directly into the eye and look at it close. Then you can see the iris slit under the artificial iris in the contact lens."

"OK," Joe said. "What do we do now? Notify the authorities? There's only one drawback to that."

"What's that?" Susan asked.

"We don't know which authorities, in any, are also non-terrestrials. Dr. Beaumont was obviously calling someone to tell them you had found 'out. That means there are others. Right now they are looking for you—us. They can be sure I know now too, and am just as dangerous to their scheme, whatever it is, as you are. And this is big."

He looked up and down the street nervously, then rested his eyes on Susan's white face.

"Until that ship gets off the ground," he said, "our lives aren't worth a plugged nickel." His next words were *non sequitur*. "Let's go somewhere and get a bite to eat, Susie."

IT SEEKS to me," Susan Graham said half an hour later, her voice muffled by a bite of cheese sandwich, "that the thing to do is for you to notify your paper and let them force the investigation."

"You might be right," Joe said. "But I can tell you ahead of time what H. B.'s reaction is going to be. He isn't going to believe it and he isn't going to do anything. Not even publish it."

"But—" Susan exclaimed.

"Look at it this way," Joe said. "It's the way my editor will look at it. You're the only one who suspects anything or has seen anything suspicious. You're the nurse in charge of that part of the hospital where those two are sleeping right now. You

walked off the job. You tell a fantastic story. On the strength of that story, we are expected to disrupt a twenty-five billion dollar experiment, question whether a reputable and outstanding doctor is a human being or not, and force our way into a hospital room and examine an unconscious patient undergoing a series of treatments designed especially to prepare her to play a vital part in that experiment."

Joe looked at Susan's discouraged face sympathetically.

"In fact," he went on, "if we take your story even to the Government officers in charge of this project, they're going to more than likely consider you a crackpot. Off the beam. And Dr. Beaumont will undoubtedly confirm that belief."

"You sound like you believe that yourself," Susan said half angrily.

"No," Joe said. "But at the same time I'm conscious of the possibility that it's true. Everything I've seen and heard from you is consistent with that, as well as the story you've given me."

"At least you're honest about it," Susan said coldly.

"Don't go flying off the handle," Joe said. "I'm just showing you what you're up against. One thing that makes the whole thing improbable is, what would be the object of it? The ship, the way I understand it, has enough fuel just for the round trip to the Moon."

"How should I know what the object of it is?" Susan said angrily. "I only know what I saw. Nothing more. And what I overheard Dr. Beaumont and Katherine Green saying while I snooped outside her door." She was mad now. "I don't know what you're going to do, but I'm going to sneak aboard that ship and go along. Then, when Katherine Green shows her true colors, I'll be in there fighting."

"But the extra weight you would

make," Joe objected, alarmed at this sudden development. "And how would you get aboard?"

"Jerome Hanes is a terrestrial," Susan went on, ignoring Joe's objection. "He'll be on my side when he wakes up."

"But—" Joe started. Then, giving up, "Oh, what's the use. I'll send my report on all this in to my editor and we'll go together." He glared belligerently at Susan's proud anger.

DR. BEAUMONT studied the blank expanse of the closed door Susan Graham had left behind her. He bit his lower lip in hesitation.

Abruptly, he turned to the bed. His fingers expertly pulled back an eyelid from the sleeping Kathy's eye. He nodded grimly. Vaguely seen under the painted iris in the contact lens was the vertical slit of her natural eye. Almost impossible to see unless you deliberately looked for it.

So Miss Graham knew! He hadn't been sure, but now he was. And from the depths of his memory came the recollection that she had once surprised him putting in one of his own contact lenses after washing his eye. She had probably remembered that, and knew that he too was a—nonterrestrial.

She would have to be taken care of some way. How, he wasn't sure yet. It was bad. If no one had ever suspected, everything would have been perfect.

He scowled at Kathy, debating whether to administer an antidote to the sleep drug and waken her. Turning down the idea with a shake of his head, he went to the phone on the other side of the bed.

When he dropped the phone back in its cradle after making his call, his lips were set in a grim line. Things were out of hand. Miss Graham had had the good sense to escape at once,

as he learned from the receptionist. There had been a man with her. Whoever he was, she had probably poured out all her suspicions and what she had learned definitely, so now there were two that would have to be found and silenced.

And there were plenty of men searching for them now, with that call completed.

He looked down at Kathy's unconscious features, smiling tenderly. One good thing had come of it, anyway. Those needles wouldn't have to be stuck in her for the records, so that the nurse would believe the same shots had been given her that would be given to Mr. Hanes.

For the next two hours Dr. Beaumont went about his duties, performing Susan Graham's tasks for her. There was no use complicating things more by reporting her missing.

Then came the telephone call.

"We've found them, Dr. Beaumont," the voice at the other end of the wire said.

"Where are they?" Dr. Beaumont asked eagerly.

"Right now they're trying to sneak aboard the spaceship," was the terse answer.

"Aboard the ship?" Dr. Beaumont echoed. "Good! Let them. See that they get on board. But don't expose yourselves. Let them think no one knows where they are."

"But what about the extra weight?" the voice asked. "Won't that throw the ship off?"

"Not en ugh to matter for our purposes," Dr. Beaumont said. "And this way, they won't be coming back. The only other way to silence them permanently is to kill them, which I refuse to sanction."

"OK," the voice said. "Too bad this had to happen at the last minute, when things were going so perfectly." There was a click as the

phone was disconnected.

"DON'T LOOK down, kid," Joe warned. "You'll get scared."

"Why couldn't we have stolen the elevator?" Susan grumbled. "My poor hands!"

"Just be careful they don't bleed," Joe said. "They'd get slippery. Ohhh ..." He had looked down. He closed his eyes and prayed.

A hundred feet below was the top of the elevator, resting at ground level. He and Susan were climbing the steel elevator shaft framework.

"Keep going," Joe ordered, his vertigo overcome. "If we'd swiped the elevator, the guard might have come back before it went back down. Then he'd have known someone was aboard. This way..."

"I know. I know," Susan gritted. "Are you sure you aren't one of them, and picked this way to bump me off? I should have examined your eyes closer."

"When this is over I'm going to examine yours very close, baby," Joe said. "From what I've seen of them they aren't bad. Not bad at all."

A smile appeared on Susan's dirt streaked face, but she said nothing.

What might have been minutes or hours or days later they arrived at the crosswalk spanning the gap from the elevator scaffolding to the space ship. The first faint blush of dawn was emerging on the eastern horizon.

"None too soon, either," Joe panted. "Another half hour and we could have been seen from below. We're going to have to work fast to find a place to hide."

They stood side by side looking down at the complex array of storage cylinders and piping that was distributed densely in the lower two hundred feet of the ship.

"If you think I'm going to start climbing over all that looking for a

hiding place—" Susan began.

"No," Joe said hastily. "We'll find some nice comfortable closet or something. Say! I just thought of something. Suppose the reason this Katherine Green didn't get the shots was because the extra-terrestrials don't need them, but terrestrials do."

"This is a fine time to bring that up," Susan said. "I don't think so, but we'll just have to take our chances."

"I saw a movie of a guy under five gees once," Joe said doubtfully. "His face was flowing like water."

"Of course, if you're afraid . . ." Susan said slyly.

"That's a pretty shade of green you're wearing yourself," Joe commented. "Let's start exploring. We've got to be settled fast, but fast."

They started along the broad ramp that climbed up around the interior perimeter of the ship. They had gone less than fifty feet when Joe grabbed Susan's arm.

"Hey! This'd be just the place!" he said.

The sign over the door read: STORAGE FOR EXTRA-TERRESTRIAL SPECIMENS.

He spun the wheel that pulled back the radial bars of the hatch cover and swung it outward. At the same time they heard the noise of the elevator coming up.

"This'll have to do," Joe said. "Someone's coming."

He and Susan darted in. Joe swung the hatch cover closed and spun the wheel on the inside that locked them in.

"Look!" Susan said delightedly. "Thick cushions to protect the specimens. That's us. Now, if no one thinks to look in here before take-off..."

"How about air?" Joe muttered. He explored until he found the small grills that connected to the ventilation system. "Now we can relax."

"I'm hungry," Susan said.

"Come here," Joe said sternly.

He clamped his hands on either side of her head and held them there like a vise while he kissed her with rough fierceness. Before she could struggle he had released her. She half stumbled back, blinking.

"Still hungry?"

THETHE AMBULANCE drew to a smooth stop near the base of the elevator leading upward beside the spaceship. Dr. Beaumont peered out through the windows, his face grim and hawklike.

He gave Kathy a warning look, then opened the doors and got out. Kathy and Jerry followed, their features masklike.

"Are they all right?" Major Poinard said as he hurried up.

"Yes, Major," the doctor said, "but they are unable to engage in conversation. At present they are in a somnambulant state. It will wear off about the time they are out of the atmosphere."

Major Poinard studied the two, nodding his head. Abruptly he turned and ordered the armed soldiers to keep the way clear, then led the way to the elevator, Dr. Beaumont following with the two space travelers.

A commotion began on the outer fringe of the crowd. It was becoming almost a noisy riot. Dr. Beaumont glanced uneasily in that direction.

"I understand the firing of the rockets is to be automatic?" he asked the Major.

"Yes," Major Poinard replied. "It's all set right now. At the precise instant it will start. Don't worry, though. You will have time to make sure your patients are safe in their shock beds and get off before that happens."

They were stepping into the elevator now. Several yards away a sol-

dier broke through the crowd and started running toward them.

"Wonder what he wants?" Major Poinard muttered.

Kathy moaned and started to slump.

"No time to waste," Dr. Beaumont snarled. "We've got to get them in their places before they collapse."

Major Poinard hesitated an instant, then ordered the man at the controls to start the elevator. It shot up as the soldier was about to leap in.

"You can find out what he wanted when we come back down, Major," Dr. Beaumont said, smiling.

Kathy gave a careful sigh of relief.

At the top several men stood ready to help.

"We don't need these men, do we?" Dr. Beaumont asked.

"Maybe not," Major Poinard said, "but there isn't time for the elevator to take them down and come up again. Anyway, I don't want to take the chance on that. If the elevator broke down we'd be stuck here."

"That's right," Dr. Beaumont said, hesitating. "But why don't they get on the elevator? Then there would be no time lost."

"A couple of them better come along, just in case they're needed," the Major said.

DR. BEAUMONT gave in, and led his two patients along the ramp that led upward to the pilot chamber.

"How much more time is there?" he asked sometime later when he was studying the position Jerry had been placed in on the shock bed.

"Fifteen minutes to the deadline for vacating the field," Major Poinard said, studying his watch. "Down below they're probably clearing it already. A car will be waiting to rush us off the field."

"I'm not quite satisfied with their

positions," Dr. Beaumont said. "The eyes, you know. They could come out of their sockets under the acceleration."

Jerry and Kathy, to all appearances, were unconscious.

"Here," Dr. Beaumont said. "Help me wedge these chunks of sponge rubber in on either side of their faces."

When it was done he stood back and studied the effect.

"Hurry, doctor," the Major said uneasily. "It will take time to descend in the elevator, you know."

"The feet," Dr. Beaumont said unhurriedly. He fussed with them, then finally stood back. "All right, let's go."

"About time. Unless you want to go along!" Major Poinard said.

They hurriedly retraced their steps to the elevator. The platform to the spaceship hinged back. The opening in the ship revealed a large metal door swinging to fill it from the inside.

"I suppose it's in the lap of the gods now, eh Major?" Dr. Beaumont said.

"Yes," the Major said. "There's not time to change a thing now—even if it cost us some lives."

Without waiting for an order, the elevator operator shoved the control all the way over. The elevator dropped almost in free fall.

SUSAN LOOKED across at Joe and smiled bravely. "Is it almost time?" she asked.

"Don't keep asking me!" Joe said. "It might start when my arm is lifted to look at my watch. Then—whammo—my arm would smash into my face or chest or something." He risked his life and looked. "According to my watch we should be leaving nowWWW!"

It was a full seven minutes before Susan's voice came, worriedly, "Did

you hurt your arm, Joe?"

"I think I broke it," he groaned.

"It didn't smash your mouth, anyway," she said contritely.

"It landed on my forehead," Joe said.

"Then it didn't do any damage," Susan said, turning her head and smiling at him. "You're too soft headed."

He glared at her, then relaxed.

"Look!" she said. "I can move my arm!" She sat up with effort.

"Better lie down," Joe warned. "How do we know this thing won't spurt again and flatten us out?"

"We'll have to take a chance," Susan said grimly. "Remember? We have to stop Katherine Green from doing any dirty work. I wonder what her real name is? Nothing terrestrial. That's for sure."

She slid her feet over the edge of the shock bed, bending almost double to avoid the shelf above her. Joe, not to be outdone by the female of the species, followed suit.

They got to their feet by exerting all their strength. Hanging onto each other they made their way to the door. Joe spun the wheel that opened the hatchway. They lifted their feet heavily and managed to get over the eight inch sill out onto the ramp.

Leaving the hatch cover open for a hasty retreat if it became necessary, they forged their way along the ramp. Every few feet they paused to rest, leaning against the wall because it would have been too much of an effort to lift themselves up to their feet again if they had sat down.

"I wonder if it gets col—" Susan began.

"Shhh!" Joe warned. "Want Katherine Green to hear you?"

"Fooey on Katherine Green," Susan said in a whisper. "I can handle her—if you're too much of a gentleman to do it even when civilization may be

at stake."

"What do you mean civilization?" Joe whispered, pausing in his laborious walk.

"It stands to reason," Susan said. "Why is she stealing the ship? So that her people, wherever she comes from, can use it as a model and attack us."

"But they must already have had a ship," Joe said, "or she couldn't have come to Earth in the first place."

"Oh," Susan said, "I never thought of that. But then, why would she steal it?"

"She wrecked the one she came in, maybe," Joe said.

"That makes it even worse," Susan said. "She's going home to tell them about us, and they'll attack us."

"That could be," Joe admitted. "What we've got to do is let her do what she intends to do and watch her. Then at the last minute when we've found out everything, bingo, we take over and head back to Earth."

"Maybe that wouldn't work," Susan said worriedly. "By that time her warships might be around us and not let us turn around. We've got to stop her right away."

"But then we might never know where she was going to head the ship," Joe objected.

"I could threaten to scratch her cat eyes out if she didn't tell us," Susan said grimly.

Kathy's soft voice entered their whispered conversation with atomic force. "I'd like to see you try, Miss Graham," she said.

Susan and Joe jerked their startled eyes in the direction of the sound. Katherine Green stood in an open doorway, a very capable looking blunt nosed automatic held firmly in her right fist, a dangerous glint in her eyes.

"I KNEW you were aboard," Kathy said. "It was much simpler to wait for you here than to go looking for you. Now, come in and lie down and strap yourselves down so I can start maneuvering the ship."

She jerked the gun to emphasize her order. Joe and Susan looked at each other, then slowly obeyed.

Kathy stepped back, keeping them covered, as they reached the doorway. Inside, they saw Jerry Hanes strapped securely to the shock bed. He studied them with emotionless eyes.

"What's all this about?" Joe asked. "I didn't quite believe it until now—what Susan said, I mean. You are wearing contact lenses, aren't you?"

Jerry's eyes swung up to study Kathy's eyes, but no expression appeared on his face. She saw this and flushed. For just an instant she glanced at him.

In that instant Joe dived toward her. But she sensed his motion and nimbly sidestepped. He landed on the hard floor with a thud.

Rising slightly, he shook his head, then rolled over. His nose was bleeding badly.

"Joe!" Susan cried. Ignoring Kathy's gun she rushed over and knelt beside him. "Oh, your poor nose. It looks like it's broken."

Kathy stared down at them, biting her lip.

"Get up on that crash bed and strap yourselves down," she ordered sharply. "I've got to start guiding the ship, and you'll be smashed against the bulkheads unless you're tied down."

"Why don't you explain to us why you are doing this?" Jerry's calm voice broke in. "There must be some sensible reason. Surely you don't plan on taking this ship to the Moon and back, with us tied up, just so you can claim credit for the success of the trip?"

"You'll find out soon enough what it's all about," Kathy said. "If I don't get at the controls in another three minutes though, it won't matter to anyone. We'll all be killed."

"Maybe we'd better do as she says," Joe said.

"I don't believe her," Susan said. But there was a shade of doubt in her voice.

"Move!" Kathy said sharply. "If you don't I'm going to shoot you. I'll have to save our lives."

"You'd better do as she says," Jerry said calmly. "In another three minutes we'll crash into the Moon if you don't."

HIS EYES were on the visiports in the ceiling. Joe and Susan looked up and saw the outer rim of the Moon bisecting each of the windows of the circle of visiports, proving that they were headed directly into the Moon. Without further hesitation they scurried to the crash bed and lay down.

"Fasten the straps about you," Kathy ordered.

"For gosh sakes, get to those controls," Susan said irritably. "We'll strap ourselves down."

Kathy went to the control panel and made an adjustment. Joe glanced up at the circle of visiports. The Moon seemed to be growing smaller, the parts he could see of it.

Kathy came over and stood beside them.

"These buckles are designed so they can be padlocked," she said. "That was in case one of us became irrational and had to be confined. I'm going to give you the padlocks. Snap them in those holes or I'll shoot you."

She went to a cabinet and brought back two small locks, tossing them on the sponge rubber bed. Joe gulped, looked helplessly at Susan, then picked

them up.

"I guess you'd better, Joe," Susan said.

Joe snapped Susan's in place first, then his own.

"At last," Kathy said. "Now I can tell you what I have to do. I have to dive the ship directly against the surface of the Moon. It has to be done at a certain speed, and at a certain spot. You, Jerry, would have refused. You'd have thought it was suicide. It isn't."

"Then it's murder," Joe said. "Have a heart!"

"She's insane, Joe," Susan said.

"No, I'm not insane," Kathy said. "Heading directly at the Moon is the only way of missing it. If I tried to avoid hitting it, whichever way I turned the ship it would crash."

"I don't get it," Joe said. He turned to look questioningly at Jerry, and saw that Jerry was looking at Kathy with an expression of dawning comprehension on his features.

"It's very simple," Kathy said. "It—"

"Yeah," Joe interrupted. "Simple means dumb. It's dumb, all right."

"Stupid, I'd say," Susan said, her lip trembling.

"MAYBE NOT," Jerry spoke up as Kathy went back to the controls without deigning to answer. "Light follows time-lines, while matter follows trajectories. Einstein's unfinished equation led to the conclusion that the Moon couldn't exist, though. Yet, Kathy, you said unless we headed directly at the Moon we'd crash into it. How is that possible if the Moon doesn't exist?"

"I won't answer that," Kathy said absently, intent on her manipulation of the controls.

"Where do you come from?" Joe asked.

"Don't bother me," Kathy said.

"Look, Joe!" Susan said. "The Moon is retreating!"

Joe looked up. Jerry was also staring upward. The outer perimeter of the Moon was growing visibly smaller. It condensed until the Moon could no longer be seen in the visiports.

"At the rate it was decreasing," Jerry said, "it would appear that we were retreating from the Moon at a speed of at least a thousand miles a second—while still going toward it, since our acceleration toward it hasn't lessened."

"That's illusory," Kathy said without turning toward them. "You see, our trajectory doesn't follow the time-lines of the space-time continuum..." Her voice died down as she concentrated on the controls again.

"You mean it's still there, only it seems to be retreating?" Joe asked, alarmed.

"It never was there," Kathy shot impatiently. "Now, keep quiet. I haven't time to sit down and give you a college education, any of you!"

"I suppose that was aimed at me," Jerry said bitterly. "My emotions are waking up now. Be careful or I'll break this lock and come over there and give you the spanking you deserve, you little brat."

"You'll pay for that, Jerry," Kathy said, turning blazing eyes on him briefly, then turning back to the controls.

"Pay for it?" Jerry mocked. "What have I been doing the past two years? It's you that are going to start paying when this is over. I assume you aren't stupid enough to kill us by clumsy manipulation of the controls?"

"Wait till we land," Kathy said. Her voice was ominous.

"Then we are going to land?" Jerry asked. "That's a relief, anyway. But land on what?"

"The Moon?" Joe asked.

"Don't be stupid like Kathy. The Moon doesn't exist. Remember?"

"Oh, yeah," Joe murmured. "I forgot."

"It exists, all right," Kathy said grimly, "but it isn't what you think it is."

"Of course not, Joe," Susan said. "It's the Sears Roebuck home office."

Kathy straightened up and turned slowly, her eyes two blazing fires.

"If you must know," she said slowly, "it isn't the Moon. There isn't any Moon. There can't be. The unfinished equation was right. For the Moon to exist, it would have to be inside the Earth. And that's just where it is—only it's not inside the Earth."

"Is she nuts, Dr. Hanes?" Joe asked, turning pleading eyes on Jerry.

But Jerry didn't seem to hear him. There was a startled expression on his face, and his eyes were thoughtful.

"Look!" Susan screamed. "We're going to crash!"

Joe and Jerry swung their eyes up at the visiports. For an instant there was a landscape hurtling toward them. Then it swung ponderously to one side as Kathy worked desperately at the controls.

"I only hope nothing jams," she prayed. Then, desperately, "Jerry, I need your help but I can't take time to get you loose. We're lost."

LIKE HECK," Joe said triumphantly.

He opened the lock on the buckle around his middle.

"Joe! You're loose!" Susan exclaimed delightedly.

"I never was locked in," Joe said. "You can close a padlock so it looks locked but isn't."

He swung off the crash bed and went to Jerry's. Kathy, giving him a

relieved smile, tossed him the keys.

In an instant Jerry was free. He joined Kathy at the controls.

"All there is is the landing," she explained. "But I can't work the controls fast enough."

Jerry shoved her out of the way and took over. The ship lurched, throwing her across the room and against the crash bed where Susan was still imprisoned.

The ship lurched again. Susan grabbed Kathy and held on, or she would have been flung against a bulkhead. She looked around for Joe. He was hanging onto Jerry's crash bed.

"It's going to be OK," Jerry said finally. "Get on the crash beds, Kathy and Joe. As soon as I'm sure, I'll run over and get on with you, Joe."

Kathy looked doubtfully at Susan, then slid onto the crash bed beside her.

"Hang onto her, baby," Joe said. "After we land she's got some answering to do."

"Don't worry," Susan said. "I will." She smiled sweetly at Kathy and flexed her red enameled fingernails. "You may have cat eyes, honey," she said, "but I have the claws."

Kathy glanced down at her own fingernails, trimmed short so they wouldn't be in the way when typing, and prudently kept silent.

A violent trembling settled through the ship. The three on the crash beds sank down in them. Jerry, at the controls, seemed to sag too, but stayed erect.

Then he was turning. Moving slowly and stiff legged he went to the crash bed where Joe lay. When he reached it he turned around and let his knees bend. Abruptly, he settled onto the bed. Carefully he swung around and lay down—none too soon.

The ship came to an abrupt stop, all four of its passengers sinking out

of sight in the foam rubber of the crash beds.

When they emerged, the terrific deceleration was gone. Weight was normal.

"Now, baby," Susan said, "you'd better start talking, or I'll work on you with my claws."

"I'll talk," Kathy said flatly. "But first, why don't you take a look outside? All of you."

"Where's that gun she had," Joe said. "Oh, there it is."

He retrieved it from where it lay against a bulkhead.

"Look!" Susan exclaimed.

Joe looked up. She was staring out one of the visiports head high in the wall and pointing. He joined her.

Outside was a gigantic field, flat clear to the horizon. But that wasn't what drew his attention.

Perhaps a mile away was a line of spaceships. Taking into consideration the distance, they were as large as the one they were on. They were in neat rows, extending back to the horizon. Seemingly hundreds upon hundreds of them.

"Look out the other direction," Kathy said.

Joe turned and looked across the room. Jerry was already at the opposite porthole. He looked at Susan. They went across and joined Jerry.

In three widely scattered spots were the crumpled remains of spaceships. They noted this idly while they watched something far more startling.

Less than a quarter of a mile away was a ship exactly like their own in outward appearance. It had been lifted onto a gigantic wheeled platform and was now moving with almost imperceptible slowness at an angle that would bring it closer to them, heading toward the ordered rows of ships in the direction in back of them.

But now something else attracted

their eyes. A quite ordinary appearing automobile was speeding across the flat expanse directly toward them.

"Let's go down, shall we?" Kathy suggested.

“WAIT A minute!" Joe growled. "We aren't turning ourselves over to a bunch of aliens on a foreign planet. We're blasting off and going back to warn the United States. Aren't we, Dr. Hanes?"

"No, Joe," Jerry said firmly. "Put away your gun. It won't do you any good here."

Joe turned to look at Susan. When she nodded her head slowly, he stuck the gun in his pocket.

Kathy, a strangely subdued Kathy, took Jerry's hand and went toward the door to the ramp. Joe and Susan, looking at each other in mystification, followed them.

When they came to the exit from the ship, Jerry pressed buttons that swung the huge door in and swung out an arm with cable and platform dangling from it.

Jerry helped Kathy onto the platform. Joe and Susan, hesitating, followed them. A moment later they were dropping dizzily, with Jerry's hand on the control cable that went up inside the supporting cable. As they neared the ground, he slowed the platform until it finally came to rest on the ground.

The car had already come to a stop. Its doors opened. Two men came out and came toward them.

"Jerry!" one of them said. "We were worried about you. Thought maybe your ship had cracked up."

Joe turned to Susan, his mouth sagging. The man was Major Poinard.

"We had a little trouble on the landing, sir," Jerry was saying.

"We'd about given you up," Major Poinard said. "I've been here over six

months already."

"What is this?" Joe said. "How'd you get here, Major?"

"This is the Earth," Major Poinard said, smiling. "But come. Get into the car. There will be plenty of time for explanations."

SO YOU see," Kathy finished her explanation, "there is nothing but Earth. What seems to be the Sun is merely the image of the Earth when it was young and hot, and what seems to be the Moon is the Earth hundreds of billions of years in the future, when entropy has settled in. When light leaves the Earth it travels on a space-time line, circling the tight universe determined by the Earth's gravitational potential, and comes back to it—but at a different time. There are critical angles, so that at any time there are only the two, the future Earth and the past Earth, that seem to be close. The other time-lines, the imaginary solutions to the equation, appear more remote in space. They are the Earth in all its stages of history."

"But this—?" Joe asked, looking around the plush dining room where they had just finished eating.

"The Earth in twenty billion A. D., approximately," Kathy said. "It is the only geodesic line to your time. And all those ships you saw on the landing field are ships made by the United States in its attempt to conquer space—before you return to prove to them that they might as well stop."

"Then we're returning?" Susan asked quickly.

"If you wish," Kathy said, looking at Jerry queerly. "You see, when the first ship arrived here—the fiftieth the United States sent out, by the way, we realized that we would have to form a rescue mission to save all the pilots. Our calculations showed

only two geodesic lines approaching your time. One was shortly before the first ship was built, the other two centuries later. So we built a ship and went back to before the first ship was built."

"But why didn't you warn us and prevent the first one from starting?" Joe asked.

"Yes," Jerry said. "That's the one thing that's been bothering me. Why didn't you stop me? Why did you help me?"

"The fiftieth ship had already been built and had landed here in my time," Kathy said. "Can't you see? I could have stopped you. I could have stopped one after another, in some way. But no matter what I did there would be that fiftieth, and the forty-nine before it. That couldn't be altered. It was better to let things take their course, and in that way we could help save future lives."

"How do you know things couldn't be altered?" Jerry insisted. "Maybe they can."

"If they could," Kathy said, "what would you want to alter? Is there something you would want to go back in time and change?"

Jerry stared at her thoughtfully.

"Yes," he said suddenly, his voice choked. "There is...."

THENE DO call off baseball games if it rains, don't they, Joe?" Dr. Hanes asked.

"Yes," the reporter said, opening the car door for him. "And thanks!"

Jerry crawled into the car and dropped wearily beside Kathy, who immediately took possession of one of his arms, clinging to it as though by doing so she could gain the confidence her expression couldn't quite assume.

He looked down at her upturned face. Suddenly a pain shot through him.

"What is it, Jerry?" Kathy asked, alarmed.

"Nothing," he said. "For a second I had a queer feeling. Almost like I was separating into two people. I'm all right now." He frowned out the window as the car got under way, moving slowly. "And why did I call that reporter Joe?" he asked. "I wonder if that is his name. Well, it doesn't matter."

He turned his attention back to Kathy.

"Did I ever tell you I love you, Kathy?" he asked softly, putting his arm around her.

"No!" Kathy purred. "Tell me."

"You know, darling," Jerry said, settling down closer to her. "A man without a woman is an incomplete quantity, in a way. A sort of—well—an unfinished equation, if there is such a thing. Now, where did I get such an expression? It describes what I mean quite well, though."

"Jerry," Kathy said, lines of worry appearing on her face. "You—you aren't going on that trip to the Moon, are you? You wouldn't keep such a thing secret from me, would you?"

The car gave a sudden lurch, swaying dizzily.

"Ohhh!" Kathy said. "I just had that feeling myself, of being double."

"Must be carbon monoxide," Jerry said. "Here. I'll open the window a bit... No, darling. I'm not going on such a wild venture as a trip to the Moon. The pilot of the first ship is a robot calculator. No humans will ride the spaceways until the first robot pilot has successfully landed a ship on the Moon and we can see it set it down."

"I'm glad," Kathy said. "Now—what were you saying? About an unfinished equation, I mean. I just love mathematics..."

THE END

The Blood Flows Red

By Rita Glanzman

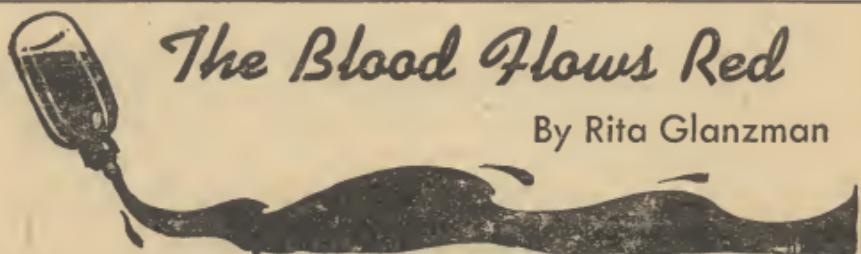
DURING the last thirty-five years, extensive study has been made of the blood of various individuals, and of various groups of persons living in different parts of the world. For the first time, data are available on the mechanism of differentiation of peoples, and we are able to classify the different races according to the absence or presence of various genes which produce particular blood groups.

Dr. William Boyd—an expert on physical anthropology, specializing in the study of blood groups—has combined the details of blood-group frequencies in different parts of the world. From these tabulations, he has gotten considerable information on man's early history, and theories concerning his early migrations. Boyd has also studied the tissues of Egyptian mum-

mies. Despite their having been preserved for a great many centuries, the bodies still afford information regarding the blood groups to which they once belonged.

According to Dr. P. B. Candela (Montagu's, 1945), Blood Group B was "almost certainly introduced into Europe between the fifth and fifteenth century A.D. by the Asiatic armies which invaded Europe during the lapse of those ten centuries". He arrived at this theory by correlating the data of history, of physical anthropology and of blood-group analyses.

These same methods and theories will probably stand us in excellent stead when we come to study our fellow beings on Mars and Saturn and the other planets. Blood tests will probably be one of the basic ways in which we will find out "what makes them tick".





By A. T. Kedzie

THE EXPERIMENTS of Heinrich Hertz, one of the brilliant German physicists of the last century, were responsible for the development of radar. In successfully convincing the scientific world of the truth of the theory of his professor Maxwell, that famous electromagnetic theory which provided a link between the concepts of electricity and those of optics—thus leading to the conclusion that electromagnetic effects are transmitted with a finite velocity—Hertz also demonstrated the existence of electromagnetic waves in space.

These magnetic waves—known today as Hertian Waves—could be transmitted through the walls of a building, reflected from metal surfaces, and applied to problems of communication—hence, radio.

Radar, so important in World War II, actually was used for the first time in 1904 when a German engineer was granted a patent in England and Germany on a proposed method for using the principle discovered by Hertz in an obstacle detector and navigational aid for ships.

There is, however, an important difference between the radar introduced during the war and the German patent in 1904. Wartime radar used very short wave lengths, whereas the German patent used the very much longer wave lengths of the sort produced by Hertz.

Today light, radio waves, radiant heat, cosmic rays, X rays, certain types of radiation from radioactive substances, and various other items, constitute one type of electromagnetic radiation. They all move with the same speed, 186,000 miles per second, although they differ in frequency or wave length.

This speed with which they move is one of the fundamental constants of the universe. No motion can exceed it. In fact, it is the one constant which shows the relationship between the mass of any object and the energy which can be obtained from it—the very basis of any considerations of atomic energy.

MONSTERS — IN — MINIATURE

By June Lurie

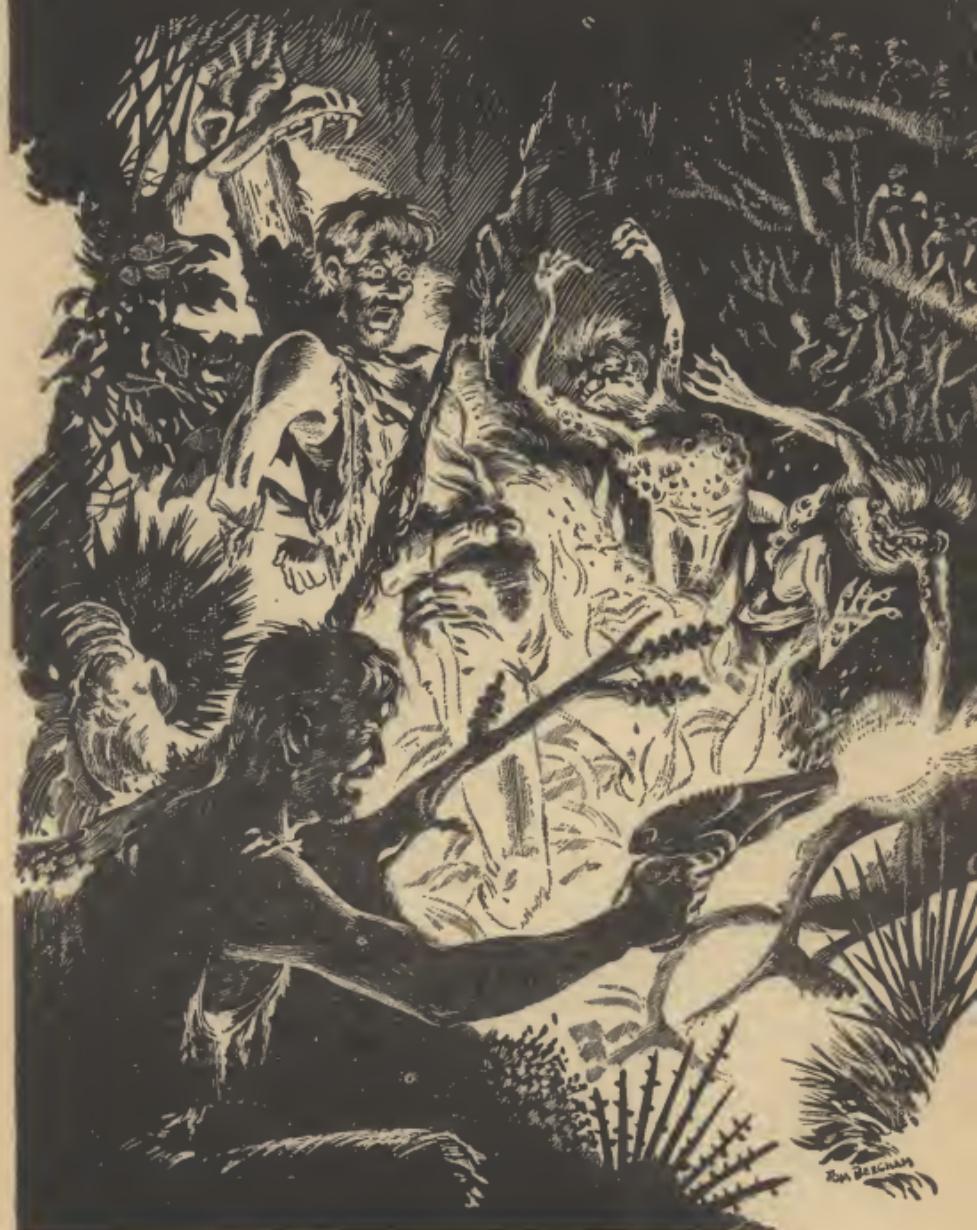
IT IS NO secret that baby atomic bombs are in the works, and this development implies a whole new turn in atomic warfare for the future. As long as the atomic bomb was essentially "Thor's Hammer", capable of smiting nothing smaller than a city, the use of the new weapon's power was severely limited. After all, there are only a certain number of cities in the world!

But a baby-sized atomic bomb changes the whole complexion of warfare. Judging from the little news released, it is probable that atomic bombs can be fitted to artillery of the conventional type as well as to rockets and guided missiles. This means that the awesome devastation of atomic destruction can be applied on a smaller scale, and that certain tactical changes are going to have to be made concerning the necessary disposition of armaments.

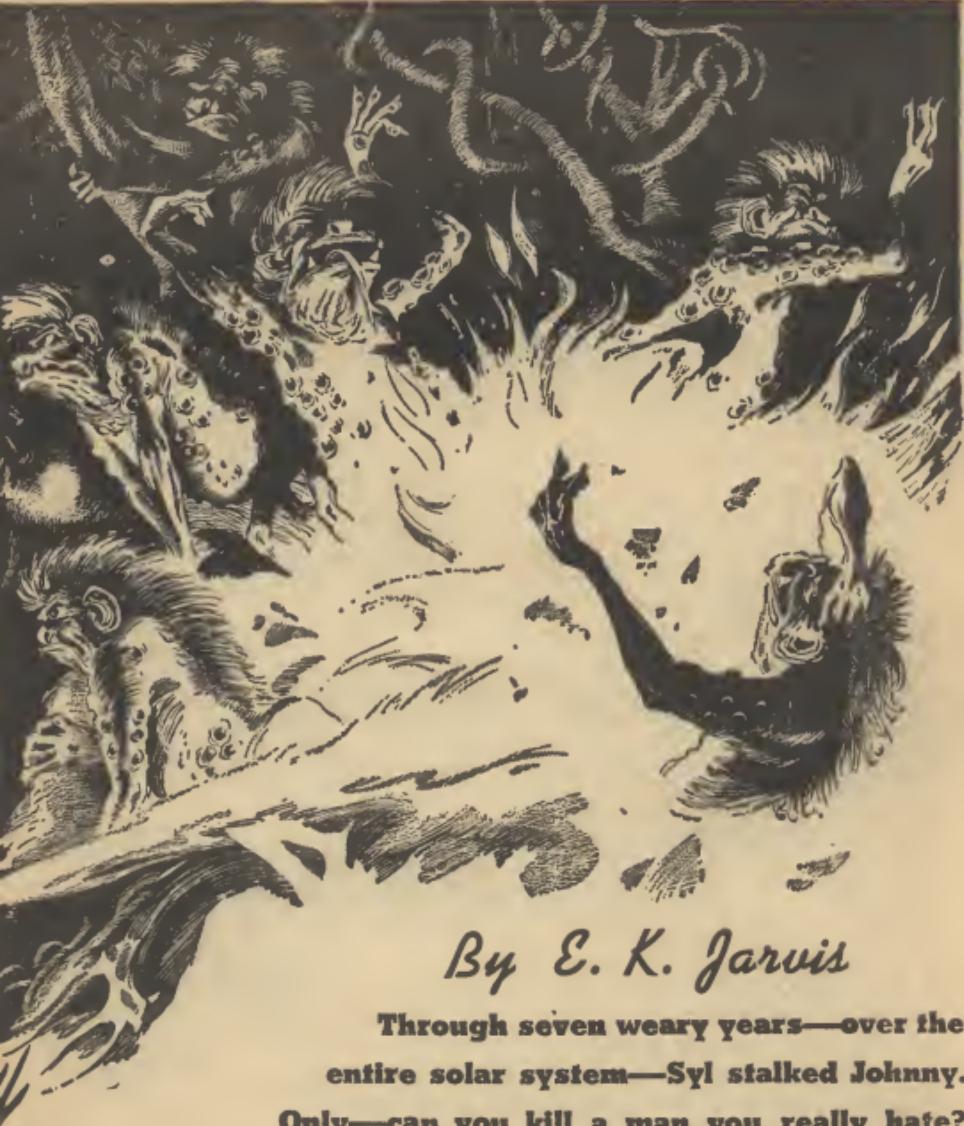
Evidently large concentrations of ships, men, tanks and other appurtenances of war are out—they would be too subject to mass destruction. The baby bomb will force the development of small striking forces, self-contained and operating more like guerilla troops than organized armies. The "Quartermill Raider" technique of hit and run will be of the type that will be successful.

A well-known s-f author once wrote a story based upon an imagined future war fought with such developments as these, and it now appears, in the light of the baby bomb, that he hit the nail on the head. He saw future war as a meeting of small units, independent and self-contained, roaming hither and yon, mingling with the enemy, and fighting a hit-and-run war. The whole military situation was constantly fluid and confused. This pattern, some of which could be seen in the final days of World War II and to some extent in present-day Korea, will undoubtedly be the form which the third holocaust will take. Weapons are simply too powerful to enable people to live and work in very large groups!

THE CHASE



Suddenly he could not even remember what the fight had been about . . .



By E. K. Jarvis

**Through seven weary years—over the
entire solar system—Syl stalked Johnny.
Only—can you kill a man you really hate?**

MARGARET was very close to death when Syl got back from the Mars run. He hurried home from the port, called her name as he entered the house, and got no answer.

He found her in the bedroom. She had cut her wrists and most of her blood had soaked into the carpet around her. There was a shadow of

regret in her eyes as he knelt beside her, and enough voice left for a few whispered words.

"Sorry...darling. Been...a fool. Killed myself—for him. But really—you—you all the time. Love you—love you..."

Now she was dead.

Syl, numbed to the core, knew it was too late. Nothing could be done,

He groped blindly at a wad of white paper close to Margaret's outstretched fingertips; smoothed out the wad; read it.

Margaret: It was fun for both of us—but it's over now. Not worth the risk, really. Syl is a violent man and I think he's getting suspicious. You'll burn this note, of course, and then forget me like the sensible girl you are.

Johnny

It hit Syl like a blow from a trip hammer. He hadn't suspected a thing. He'd worried a little. About Margaret all alone while he was away on the Mars run three weeks at a stretch; but only about her loneliness, never about infidelity.

He got up and walked, like a drunken man, to the phone. He punched out a number and waited.

Johnny. Johnny Haber, of all men. Sneaking around; taking advantage of Margaret's loneliness.

"Hello."

"Johnny? This is Syl Martin."

"Hi, Syl. Glad you're back. How was the run?"

"Margaret's dead, Johnny."

A gasp. "Dead? Dead, you say?"

"She got your note. Killed herself."

Silence followed Syl's flat, expressionless words. Then he had something else to say. Just as flat; just as expressionless. "I'm going to kill you, Johnny. You're a rotten son-of-a-bitch. I'm going to kill you."

Syl put down the receiver and turned back to the dead thing on the floor; the dead thing that had been his wife.

TWO DAYS later, Syl Martin went directly from Margaret's funeral to the offices of Trans-Space Inc., and

dropped his gold flight card on the dispatcher's desk. "I'm through. Take me off the payroll."

"It's okay, Syl. I understand. Lay off for a couple of months. Then take another flight test. Come back when you feel fit."

"I'm through. So long."

Syl left the office and went to the Paramount Hotel and asked for Johnny Haber.

"I'm sorry. Mr. Haber checked out two days ago."

"Did he leave any forwarding address?"

"No. I'm sorry."

It was only now that Syl remembered his phone call. A silly thing to do, but men do silly things under the impact of a great shock. He'd called and warned Johnny. Of course Johnny had checked out. He'd have been a fool not to. Syl went to the baggage room and gave the head rouser a five-dollar bill.

"John Haber? I don't know. Wait, I'll look." The rouser checked the out-sheet. "Uh-huh. Here it is. Galactic Lines. Direct to the space port."

The girl at Galactic had red fingernails. One of them ran down a page of her record book and brought a smile to her crimson gash of a mouth. "A John Haber was on the passenger list of the *Orion*," she said brightly. "Out for Venus eighteen hours ago."

"What else have you got for Venus?"

"The *Great Bear*. Blast-off tomorrow at six A.M."

"Accommodations for one."

THE *Great Bear* roared into Venusian slips and nosed through the tunnel past the air-gates that held the heat of the planet at bay. Syl Martin disembarked with a glow of satisfaction. Johnny Haber had been a fool to come here. New London,

under the plexi-glass heat guard was, of necessity, a small city. A man couldn't hide very long in New London.

In fact, there were only two hotels. Syl got the wrong one first.

"No check-ins at all off the *Orion*. Sorry."

At the second hotel: "A Mr. Pratt. A tall, dark gentleman. A salesman, I believe, for a soap company."

Syl was puzzled. Then he went back to the port and made inquiry. "Was there an outbound ship between the arrivals of the *Orion* and the *Great Bear*?"

"One, sir. An ore freighter for Saturn with two stops scheduled in the asteroids. The first at Station Seven. The second at the uranium depot on Twenty-Six."

Syl's bitter disappointment did not show. It could have been only a casual inquiry. But, behind an immobile face, his mind worked swiftly.

Johnny had been clever. He'd known of that freighter even before he'd left Terra. Syl should have inquired, too. He should have known Johnny would never bottle himself up in New London.

But, regardless, the time had come for a gamble. Swiftly, Syl made his bet. Johnny would not stop at either of the asteroid stations. They were even smaller bottles than New London.

"What have you got for Saturn in the near future?"

"Nothing—direct. Horizons Unlimited has a passenger shell out for Mars in three days. You could effect a transfer there."

"That's the best I can do?"

"The very best."

"I'll take accommodations for one."

THUS BEGAN a chase that drained Syl Martin of every dollar he

had. For two years he rode the space lanes—up and down and back again. For two years Johnny Haber eluded him; once by a matter of eighteen minutes. On that occasion, Syl stood on the observation deck at Port Fremont, Ganymede, and watched Johnny Haber's ship flash away into the night sky.

He stopped finally, on Mars, and went to work on a construction job. As soon as he had ship-fare to Luna, he quit his job and booked passage.

Another year passed and Syl's mind had gone into a strange, monotonous channel. He didn't do much thinking any more. Not even of Margaret. He ate, slept, studied space schedules, and became a genius at worming information out of unsuspecting clerks, rousters, and space personnel.

Johnny Haber changed his name three times. The first alias threw Syl off for two months—sent him back to Venus, where he discovered his mistake. He worked in a restaurant for six weeks in order to get enough money to correct his error. Then he went back to Terra, nosed around for a week, and picked up the trail again.

Occasionally, stranded on some planet, set down broke in a mining camp on an asteroid, Syl would look up into the sky and wonder: *Why doesn't he give up? He must know I'll get him some day. He must know the universe isn't big enough to hold both of us. Why does he keep running away? He could pull up and wait and it would all be over in a few seconds. Wouldn't that be better than running like a rabbit for a year—two years—three—five?*

But Johnny Haber did not stop. He, too, ran out of funds. He, too, was forced into employment in order to continue his flight from the hound

in eternal pursuit. But he evidently developed a craftiness of his own. Possibly the urge for survival put an instinct into him—a sixth sense—because in order to elude Syl he must at times have gotten up from the middle of sleep and fled for no apparent reason.

And once none too soon, because Syl tiptoed in to find the impression of Johnny's head still in a pillow.

Syl aged. He noticed one morning that he'd grown quite gray at the temples. He found new lines in his face—deeper crow's-feet at the corners of his eyes. But he noted these things only in passing, scarcely gave them any thought save a silent question: *I wonder what Johnny looks like by now?*

That was at the end of seven years.

And his mind had dulled down a great deal in all things save those which had to do with the chase. Relative to the chase he became keener as time went on.

DURING the seventh year, Syl had a stroke of good fortune or, rather, an occurrence he rated thus. He was almost burned to death in a jet backfire on the *Kentuckian* out of Luna.

The burns put him in a hospital for five months, but also gave him a ten-thousand-dollar bank account when the check for personal damages finally came through.

The money turned the balance of the chase in Syl's favor. Penniless, eternally harassed, Johnny had need of superhuman instincts to fend off the hound. He did an able job of it after Syl again picked up his trail on Jupiter. He escaped the last minute, to the asteroids, and went deep into the mines to man a rock blaster and earn space-fare to keep on eluding Syl Martin.

He came topside for a rest and stood watching the freighter take on a last scoop before closing ports. At the final instant, without apparent reason, Johnny piled in after the ore. The port closed. The freighter blasted off.

Two hours later Syl Martin rode in on a new superliner of the Silver Fleet.

But an empty pocketbook can't beat a full one. Even the breaks, it seems, turn ever in favor of the moneyed man. Johnny hove into Mars a few months later, knowing Syl was not two days behind him. He had his course charted and was due to make connections with a fresh vegetable shell kiting immediately for Jupiter.

But the fates thwarted Johnny. A sharp-eyed inspector cancelled the stamps on half the shell's load, and the captain turned back his invoices. The balance of the load wouldn't cover expenses.

So Johnny dropped from his inbound shell and ran to the blast-off ramp to find the Jupiter ship bolted to the stays.

Johnny was trapped on Mars.

Syl Martin came in two days later and went through the bloodhound routine he could now do in his sleep. No ships out. That locked up the skies. The hotel check revealed the arrival of two female travelers—no more.

Twenty-four hours later, Syl discovered the panic into which Johnny had fallen. Without money to hire transportation from New Trier to Highland, the second space port city on Mars, a man with a pack on his back had gone out of the west exit of the city to try for Highland on foot.

It was an almost suicidal move. The Capeheart swamps barred the way, and these swamps were in-

habited by the three-legged *Lorns*, a bloodthirsty race who killed for the joy of killing.

The *Lorns* had never been brought to book by the Universe Police because of the nature of the swamp in which they lived. They could have been eliminated only by blasting away the swamp itself, and this would have been an expensive undertaking. So, to date, they had been left to themselves. They never ventured out of their own area and crossing the swamp had, at one time and another, been the ambition of members of the adventurers' clubs. It was on record that only two of these hardy individualists had gotten through.

Syl pondered this as he prepared to follow Johnny. Could the fugitive make it? Syl wondered. He was still wondering as he went out the west exit, waved a hand at the gateman, and faded off into the swamp.

He followed his compass through the thick red vegetation for half a day. And the compass line never varied six inches from the path broken by Johnny Martin plodding on ahead.

SYL DID not let down for an instant. Thus, when the first *Lorn* dropped like a blue shadow from a branch overhead, Syl jumped backward and cut the creature in two with the ray gun he clutched in his right fist. He stepped over the puddle of gray ooze that ran from the *Lorn's* body and went on his way.

Two hours later he killed another one—one of the many he knew were watching him from behind the crimson trees and bushes.

A short time later he heard a cry. They had Johnny! Syl's alertness increased as the soft, obscene chuckles around him swelled in volume and then faded away.

The *Lorns*, he knew, were no longer watching him. They had gone on ahead to share in the fun of torturing an alien creature to death. It would be a night-long ceremony. Johnny would not die until morning. But by that time he wouldn't look like Johnny any more.

Syl moved swiftly forward. Daylight faded and soon he could see the fire blazing in a circle; the post set in the center of it.

Johnny Martin.

He had changed. Syl was surprised to see how much Johnny had changed. His hair was pure white. His face, tanned the color of old leather, was nonetheless haggard. And his expression was that of a man who no longer cared very much.

Syl raised his gun. Johnny Martin's head settled into the sights.

But a question stayed Syl's finger. A strange, inane question: *Why do I want to kill him?*

Seven years. Now, at the last moment, he had to stop and remember.

There had been a girl. His wife. Margaret. Odd that he hadn't thought of her for so many months. And now, thinking of her, it was to remember she had been untrue. Why hadn't that been important back on Terra seven years before?

Now, with Johnny Martin's head in a gunsight, it became very important.

Syl holstered his gun and took a handful of small bombs from his pack. He flipped one into the nearest group of *Lorns*. The creatures went up in quick blaze of flame. The bombs continued to fly here and there, doing deadly work; spreading death, destruction, panic.

AT THE RIGHT moment, Syl rushed the pole in the center of the circle. He cut Johnny's bonds,

gave him a gun.

"Let's go. The way we came in. Back to back."

They covered quite a distance before the *Lorns* reorganized and came streaming after them. But the bombs held out and the gray ooze marked a twisting path back toward New Trier.

They made it in the early morning light.

They should have been men with a lot to talk about, but very little was said. They slept in the same room and the following morning Syl asked, "You want to go back to Terra?"

"Yes."

"Broke?"

"Stone broke."

They parted company at the Terran port with brief nods. Syl went directly to his home. The bungalow he still owned and had not seen for seven years. He unlocked the door and went inside.

All was mustiness, solitude, loneliness. He went through the rooms one by one and came finally to the bed-

room where she had died. The shades were drawn. The room was dim and he could not see the dark stains on the floor. In fact, he kept his eyes averted.

He sat down on the bed absorbing the silence, the memories. Outside the window a bird chirped. Inside, it seemed, the faintest aroma of her perfume still clung.

After an hour Johnny got up and left the room and went into the street. He was gone for some time. When he returned his shoulders drooped, his step lagged. He sat again on the bed and lived with the memories.

In a few minutes two men entered the room. Syl stared at them dully and made no move.

One of the men said, "Stay where you are. You're under arrest. Witnesses just saw you shoot John Haber to death on the sidewalk in front of his house."

"You won't need witnesses," Syl Martin said. I'll plead guilty. Do you want the confession now, or shall we wait until we get to headquarters?"

THE END

WHO'S GUILTY?

By Russell Newton Roman



BECAUSE of the deadly use to which atomic power has been unleashed, there has been, in some circles, an undercurrent of discontent with the scientists who have been accused of a special guilt in modern warfare. This is not justified.

To ask a scientist to hold back on the discovery of any development which may possibly lead to an instrument of war, is ridiculous. Generally speaking, it is pretty impossible to predict to what use any special knowledge will be put.

To guarantee absolutely that no scientific discoveries would be adapted for use

in wars, science would have to be given up altogether. And if this "age of science" were terminated, civilization would begin its rapid slide downhill. The conveniences and comforts and knowledge that have become ours as the result of scientific research are very desirable. Science provides the means of obtaining the very best that life offers.

If we—as groups of political and national and religious units—choose to use the instruments of scientific research for our destruction rather than our enlightenment, that is just our own plain hard luck—and destruction is perhaps no more than we deserve.

CAUGHT!

By Leo Lewin



FOSSILS are discovered in many different forms. They may consist of the actual remains of an organism; replacements of the hard parts of an organism by the infiltration of mud and sand, chemical deposits, the petrification of skeletons; or impressions left by organisms in what are now rocks—such as tracks, trails, burrows, etc.

Thousands of years ago, the asphalt pits of California were soft and sticky. Animals were caught in these sticky pools and died. Today, these sticky pools have

become hard and solid, and have yielded a great variety of bones of extinct animals, such as the saber-toothed tigers.

Amber, a material which often contains fossils, is actually a hardened gum from trees that lived long ago. In the days when that gum was sticky and soft, insects which are now extinct would often become caught in the sticky mass. More of the oozing gum covered them.

The hardened and preserved amber frequently contains in perfect preservation the insects of thousands of years ago.

THERE'S no true beginning to any scientific history, although most scientific ideas can be traced back to the very ancient Greeks. It was in classical Greece—many centuries before Christ—that the idea was first admitted that there was a complete rational explanation for all the mysterious phenomena in the world.

Thus, the idea of atoms goes back to the Greek Democritus. Pythagoras and Plato get the credit for the idea that the laws of nature should take the form of numerical relations. And so on.

But there is one scientific story for which our times do get credit. The idea of the growth hormones in plants is of recent period. This was unknown to the plant scientists of even the last century. Our knowledge of this important subject starts somewhere around 1880.

Charles Darwin made the early experiments in collaboration with his son Francis, when the elder Darwin endeavored to find why plants bend toward the light. These experiments were continued by Robert and Fitting, and in 1910-11 by Boysen-Jensen. During the time of the first World War, and just after, the Hungarian botanist A. Paal repeated and extended Boysen-Jensen's experiments. Paal's tests seemed to show that a hormone-type of substance controls plant growth, even though there is no blood stream in plants.

The Dutch scientists F. Kogl and A.J. Haagen-Smith found three plant hormones: Auxin A, Auxin B, and indole-acetic acid. These were isolated, in the following years, by various scientists, and experimented with, and are now used commercially in numerous formulae. They're used in various solutions to aid plant growth and, in greater doses, to kill weeds, to stiffen plant stalks which would normally bend over due to the heavy weight they were carrying, and to prevent the formation of buds in stored plants.

The development stages of the auxins

WHO'LL
BUY MY FLOWERS?
By Salem Lane

are typical of most scientific discoveries. It's always a round-about way. First, the naturally occurring substance is isolated. Then, the chemist produces these substances synthetically. Then he usually manufactures new compounds which act in much the same way as those in nature. But they are often cheaper to obtain, cheaper to use, and even more effective for certain purposes.

If a gardener had asked Paal, or Boysen-Jensen, or Kogl and Haagen-Smith to help him find weed killers, these scientists would undoubtedly have turned to the use of poisonous chemicals or flame throwers. It's only because these men were not interested in a practical problem—only wanted to observe at first hand an interesting phenomenon of nature—that Man is indebted to the various benefits he has received from the auxins.



The cat arched its back, and I was stunned by the electric shock, and then I heard a shot . . .

THE GREEN CAT



By

Frances Deegan

WHEN I finished up a six-week field survey for a southern TV hookup, I put in my customary request for vacation leave, and got the customary answer by wire: "Return Chicago immediately for emergency job. Regards. George."

George Bell was boss of the electronics division of X-L Consulting Engineers, and he was a tough man to convince. Every time I asked for leave, he dug up another emergency job for me. He claimed there was a shortage of trained men, and he had kept me humping for the past two years without a stop. It was time to call it, and I was in the mood to do it.

I turned in my final report and rec-

**There was nothing concerning this type of
strange electricity in Rango Will's manual—
it had sharp teeth, claws, and a love life**

ommendations, and Hager, the office manager, said: "George was asking for you. He wants to see you right away."

"Not half as bad as I want to see him," I growled, and tramped off to his fine air-conditioned office with some choice vituperations on the tip of my tongue.

That southern survey in midsummer had stewed all the mellow juice out of me, and my disposition had gotten so vile I even snapped at myself when I got up in the morning. All I wanted was a good long rest, and I had it coming. This time I was determined that George was not going to get around me. Not even if he broke down and cried real tears.

When I stepped into his pastel-tinted reception room, his cool-skinned Nordic secretary warbled: "Hello, hello! What a beautiful sunburn! You look barbecued. And you're just the man we're waiting for."

"You must be mistaken," I snarled. "Because I'm not the man you want. We got that settled the last time I took you out. Remember?"

She blushed a pale pink and stammered: "Go—go on in. You big beast!"

I slammed through the door and said: "Listen, you low-down, high-pressure son of a—"

"Ah, there you are!" George beamed happily from behind his bleached mahogany desk. His full face and stocky body were sleek with ease and good living. He was the jovial type, and hard as nails underneath.

He turned to the young woman seated beside his desk and chortled: "Here's your man, Miss Dougherty. Rough and tough, and rarin' to go. This is Rango Will. Mr. Will, Miss Dougherty."

I closed my mouth and swallowed some bad words the wrong way.

"Mph," I said.

"Glad to know you, Mr. Will," she drawled, and eyed me without embarrassment.

SHESHE WAS slim and dark and relaxed in the red leather chair. Her knees were crossed gracefully, and not prudishly. She had nothing to be ashamed of; she could have shown even more without looking vulgar. Her face was a firm oval with a willful, petulant mouth, a straight nose, and dark eyes full of suppressed fire.

George grinned expansively.

"If you're busy," I said stiffly, "I'll wait a while. Nothing important. I just want to make arrangements for my vacation. I'm long overdue, and I need a rest so bad I—"

"I've got just the job for you," George crowed enthusiastically.

"You can tell me about it after I get back from my vacation."

"I'll tell you about it now. How'd you like a de luxe camping trip up in the Black Hills? All expenses paid. Wonderful fishing, wild country, no tourists, fine healthy air—"

"Wait a minute," I said. "What's the job?"

"Oh, that." George waved a manicured paw. "Simple matter of tracing down the cause of interference. Miss Dougherty is the daughter of Sam Dougherty, the man who publishes a string of newspapers up that way. The family also controls several radio and TV stations in which Miss Dougherty herself is interested. They've been getting complaints from the entire area about this interference, which seems to be more or less constant. They've traced it to a location in the Black Hills. All you have to do is run it down."

"If they've got sense enough to locate it, they ought to be bright

enough to know what it is," I growled. "Why call in a trouble shooter now?"

"We don't know what it is," Miss Dougherty snapped. "There's no known installation of any kind at that point, and aerial photos show nothing at all. Therefore, I want a trained investigator to run it down."

We were glaring at each other and I didn't know why. Suddenly I felt like a fool. I'd made her mad, but it wasn't her I was mad at. It was George.

"It'll be a nice outing, Rango," he said suavely. "Not much of a job for a fellow like you." He beamed at Miss Dougherty's frown. "He's our ace field man. That's why I told you it would be advisable to wait for him to come in. I could have assigned one of the others, but I'd like you to have the best, even on a simple job like this."

"I see," Miss Dougherty said coldly, and gave me the eye again. It got under my skin. There was a challenge in the way she did it, as if she doubted that I was the best. As if she thought George was really trying to shove off a broken-down old wreck to handle her simple little job.

"It may not be as simple as it looks," she murmured. "You'll have to be flown in, and it's wild country. Two men have already lost their lives—"

"Oh, they were fools!" George dismissed the two men with a lordly gesture. "You can't send lab men out on field duty. Rango can handle himself in any kind of country, and he's the most talented electronics engineer in the country. He's the one man who can handle your job and do it right."

SHE SMILED enigmatically, still doubting, but daring me to do it. I knew I was hooked again. That George! He didn't get where he is be-

cause of his pleasant blue eyes and pearly white teeth.

Two days later I drove up to South Dakota, dumped my load of equipment and camping gear at the private landing field as instructed, and spent the night at a pseudo-rustic inn with hot and cold running water and air-conditioned dining room. The bed was very comfortable, and I had nightmares all night.

I kept dreaming about this weird woman. She was crazy as a double-jointed monkey wrench. She had a name—Mahgla—and she had silky pink hair, lavender eyes, and an impudent nose over a rosebud mouth. She was so pale she was almost transparent, and she kept performing a weird ritual, over and over again. It was a erotic performance, but there was nothing pleasant about it. It was like being devoured in a slow, purposeful transformation which sapped my mental and physical strength, converting it to another form, and destroying the empty shell that was left. There was madness in it.

I dragged my exhausted carcass out of bed in the morning and stared at a haggard face with savage red eyes. I was convinced that this was the result of George Bell's slave-driving methods, and I cursed him from hell to breakfast. I was sure that I was on the verge of a nervous breakdown, and that the dream was symbolic of the strain from over-work. It was all George's fault, and it would serve him right if I got lost in the Black Hills and didn't find my way out for six months or so. And then I remembered Miss Dougherty's enigmatic smile and knew I was stuck with her job, no matter how much I resented it.

I arrived at the air field in a vile temper, and found Miss Dougherty herself standing beside the 'copter

that was to take me in. She was looking very wide awake and smart in blue slacks and yellow sweater, and her dark eyes were glowing with unusual warmth.

"Good morning," I said bitterly. "It was kind of you to come out to see me off."

"You're late," she snapped. "Get aboard."

"Yes, of course. As soon as I see about loading my—"

"Your equipment is all stowed. Get in. I've got a luncheon engagement."

"Sorry I kept you waiting," I said stiffly. It seemed a bit early to start worrying about lunch. "Where's the pilot?"

"I am the pilot. Will you please get aboard!"

"No. Not until I've checked my equipment." I grinned unpleasantly. "And if I find the officious busybody who loaded it without my permission, I'll flatten his nose. Nobody handles that equipment but me. Let's have that understood from now on."

HER EYEBROWS lifted, and she said: "You sound almost as tough as you are reputed to be. But you'd better save it. You may need it in the field. As for your precious equipment, we assumed that everything was properly packed for handling. And we saved considerable time by putting it aboard while we were waiting."

"You went to a lot of unnecessary trouble," I said with kindly sarcasm. "I'll have to check it anyway. If one small item should happen to be mislaid or overlooked, my whole job could be stalled indefinitely. It will take longer to check it now than if I had put it aboard myself. But, of course, I'm in no hurry. I don't happen to have a luncheon engagement."

"You're being insolent, Mr. Will!"

"Don't take yourself so seriously, honey. Gorgeous dolls should never take themselves seriously. It's unnatural. Can you imagine a scowling rose, or a butterfly stamping its feet? Can you picture a—"

She turned on her heel so hard she gouged a hole in the gravel, and stalked back to the hangar, her back as stiff as a ramrod.

I glanced at the load and it looked all right, everything neat and tight, and all accounted for; but I stalled for a while just to make it look good. After thirty minutes I sent word that I was satisfied, and she came out and climbed aboard, ignoring me completely.

We made no attempt to communicate with each other on the two-hour run. She handled the 'copter with commendable skill, and sat down on a lonely plateau in the high rugged country. I checked the aerial map, and it was the spot indicated by a small red circle, but something was obviously wrong with the reports which indicated this location as the source of the interference.

I climbed out and surveyed the wild tumble of barren peaks that fell away to the black shadows of cedar growth far below. Nearby a tiny stream dashed madly over the rocks in a great hurry to get somewhere else, and a few starved and stunted cedars added to the general air of desolation. Nothing moved but the wind, a tormented wailing that died away in the distance and started up again from several places at once, as if the sterile atmosphere were full of lost souls.

If we had not already broken off friendly relations I would have talked her into taking me back out of there. But I was still feeling stubborn and mad. If the Dougherty family were crazy enough to pay for it, I was per-

fectedly willing to camp out for a week or two where I was sure to get some much-needed rest. It was their idea, not mine, and they were fully informed about the high prices charged by X-L Consulting Engineers.

MISS DOUGHERTY continued to ignore me. She went and sat in the shelter of some battered rocks and smoked a cigarette, and I started unloading. Quite suddenly, without warning, the weird woman of the dreams came vividly into my mind. And with the memory there was a chilling sense of alarm. I began to wish I had not been quite so stubborn about being left out in the wilds alone. If I was headed for a crack-up, I would be a long way from help. But I couldn't break down now and beg the haughty Miss Dougherty to carry me back to safety. Her profile looked uncompromising, it was too late to change my tactics.

I had the load out by the time she finished her cigarette, and she sauntered back and started to climb in. Then she turned and faced me earnestly, and her dark eyes were glowing with something that was not anger.

"I'm sorry you dislike me so much," she said huskily. "I was hoping we could cooperate—"

"You don't know how much I'd like to cooperate with you, honey," I said warmly. "I was hoping you'd make the first move. I don't want to be left here alone." And like a damned fool, I grabbed her and kissed her.

It didn't take. She didn't even slap me, just wrenched herself away and climbed emphatically into the cabin. I felt like a moron, but I didn't want her to know it.

"Adios," I said brightly. "And don't forget to come back." A sudden thought struck me. "Hey, you're leav-

ing the map. Are you sure you can find the way back in here?"

She looked down at me indifferently. "I think so," she said, and slammed the cabin door.

The blades spun and I scrambled out of the way. She bounced off into the wind with never a backward look. I could have kicked myself—if I had been twins.

I wandered around the bleak plateau feeling lost and lonely, and finally I selected a camp site and spent the day arranging it for a comfortable rest. There would be plenty of time later to go through the motions of inspecting the locale and drawing up a negative report. The technicians who had spotted the disturbance up here must have read their instruments backwards.

I turned in early, still convinced that I needed a good rest, and fully determined to get it. The sad wild wind was like a thousand violins that never stopped playing, but nothing could keep me awake once I hit the sack. I was really tired out, and sleep hit me like a club. And then the nightmare started again—Mahgla, with the pale, avid eyes and the hungry rosebud mouth, and the strange mechanical ritual which violated the irreversible laws of matter.

IN MY DREAM Mahgla embraced me, and I was caught and held by an electro-magnetic force which began a slow and painful process of disintegration. I was helpless to resist, although I was fully aware of the impossible thing that was taking place. It was a controlled reduction to sub-atomic particles without loss of the vital forces. And I became a controlled mass of electronic particles with a conscious mind and physical force; but without the will to activate them. It was weird and totally impos-

sible, and yet it was frighteningly real. The sense of an exterior will taking possession of the purified mass of my being was overpowering.

In the morning I woke up in torment. From head to foot my skin was inflamed with red patches that burned like quick-running fire. I had one godawful itch.

I stripped and dunked myself in ice water, in the mountain stream that ran past the tent. As soon as I warmed up, the itch came back, worse than ever. I nearly went wild. I pulled the tent down and examined the ground. I tore the sleeping bag apart. I looked for bugs, weeds, anything unusual. Nothing to account for the maddening affliction except possibly my own nerves. Not being a nervous type, I had no idea how a nervous breakdown might commence; but it seemed very likely that this might be it. I couldn't sit still. I walked and climbed and cursed, and found nothing on the barren plateau but rocks and dejected cedars.

Toward noon I decided I needed a drink, and staggered back to my camp. I was slightly feverish and lightheaded, and the sight of my camp strewn about in wild confusion as I had left it did nothing to ease my discomfort. I stumbled among the disordered piles of equipment and found my gun, and thought hazily that running around without it had not been so smart. I picked up the whiskey flask, and something behind me went "Boing-g?"

It sounded like a mellow violin, as if somebody had gently plucked a string and slid one finger up the scale. For the first time that day I was not conscious of the burning itch. I was chilled. I picked up the gun and turned around carefully.

There was a long-legged cat there, gazing at me blandly. It was a large green cat with evenly spaced white spots. I lifted the gun and it sat down

and curled its long tail cozily around its front feet. "M-m-boing?" it inquired chattily.

"Scat," I said feebly.

The cat stared at me hopefully and my arm fell against my side. I sat down on a carton of canned food. It is supposed to be easy to shoot a sitting duck. It isn't. It is still harder to shoot a sitting cat, especially when it looks at you with trusting blue eyes.

I uncapped the pint flask and took a drink. It burned pleasantly and took immediate effect, nerving me to face the cat.

"Boing!" I mocked, and the cat rose with elegant grace and came towards me. "Get away, you flamboyant feline," I muttered. "You gave me the itch."

It came on and rubbed itself gently against my knees. It was about the size of a greyhound, and twice as friendly. I put my hand on its back and the fur was deep and soft and crackled with electricity.

"Hair of the cat," I said vaguely. "If you gave me the itch, maybe you can cure it. You certainly can't make it any worse."

I WAS TRYING to recall all the odd breeds of cats. There were a great many, and some of them were very rare, but I could not place this animal. The spots on its back were the size of a quarter, diminishing in size on its sides and blending into a soft cream-colored belly. Its eyes were a brilliant turquoise blue, and its ears were small and tufted. These were the evident facts.

There were other facts which did not explain themselves. The cat was tame, even affectionate. And it had no business being up here in this barren waste. Or rather, it had no business being up here alone. I thought about that and took another drink. The itch was still with me, but the cat

had taken my mind off the torment so that it was at least bearable.

The cat put its paws up on the box and tried to rub noses with me. It was hissing gently and had a peculiar smell that was not altogether unpleasant. It was not an animal smell, and there was something vaguely reminiscent about it, but I couldn't think why.

"You're acting awfully familiar with me," I said, and pushed it away. "You must have slept with me last night."

In all my frantic searching for the source of the allergy, I had not thought of looking for cat hairs. I put the cap on the whiskey flask and got up and slid it into my hip pocket.

"Go home!" I shouted. "Go on—scat! Git!" I made wild shooing motions with my arms and clapped my hands.

Startled, the cat leaped over the wreckage of my camp and went off across the rocky plateau with a fluid grace that was swift and streamlined. I ran after it and kept it in view until it apparently leaped through a huge solid boulder. I came up to the boulder panting and found that it was solid, and there was no place else the cat could have gone.

I turned around feeling weak and sick and frightened at the tricks my mind was playing. I still had the automatic in my hand, and I looked at it bleakly, thinking there was nothing up here to shoot but me. I threw it away, shuddering, and leaned back against the boulder. I closed my eyes and had the sensation of sinking into the hard rock as if it were soft yielding dough. I knew it wasn't happening, and so I didn't resist, but just let it happen. I thought I was delirious, and losing consciousness....

SOMETHING went "Boing?" But the sound was remote in a vast stillness that muffled sound as effectively as a steady roar. I opened

my eyes dizzily on an undulating gray fog, in which I seemed to waver in a state of violent sea-sickness.

At first I couldn't see anything at all, and then slowly a misty shape began to take form and color. Some vague part of my mind assured me reasonably that I had fallen asleep, because I was lying flat and looking up at Mahgla, the weird dream girl.

"You came through the dimensional barrier so easily," she said, and pursed her rosebud mouth, pleased with me. "You are not even distorted."

"That's what you think," I mumbled feebly. "I'm practically destroyed. And if you don't leave me alone—"

"Who is that dark woman?" she asked with sweet menace.

"What dark? Oh, you mean Miss Dougherty. Never mind about her, she hates my hide. If she knew how you've got me in your clutches, she'd laugh herself sick."

"When is she coming back?"

"Not for a long time," I muttered hopelessly. "A week—two weeks. Maybe never."

"Then she will be too late," Mahgla murmured. "She cannot project her interference from a distance. Do you know what you are?"

"Uh-huh. I'm an electronic gadget with a short circuit. I keep sputtering out and seeing you."

"Your faculties are not sufficiently evolved to permit you to see anything in this dimension. You perceive only what I present to your senses. Like this..."

The cat came from somewhere and sniffed at me daintily.

"I might have known that beast belonged to you!" I sat up dizzily and tried to push the cat away, and the gray atmosphere all around me crackled and snapped with electricity. The cat purred like an energized dynamo and stepped away with sensual

grace.

"You are very potent," Mahgla declared, and her voice, too, sounded like a purring motor. She seemed to undulate with delight, and waves of ecstatic sensation hit me like a series of shocks. "You have the power to revitalize an ancient world. That is what you are—the father of a new race—"

"Oh, cut it out," I mumbled irritably. "You're crazy as pink elephants. I dreamed you up in a moment of delirium. And you did not materialize that cat just now because I have seen it before, and the damned beast gave me the itch...." My mind trailed off into uncertainty.

MAHGLA picked up my thought. "Did you dream the itch, too?" she asked sweetly. "It was very real, was it not? But it is only a slight contact burn. The others were not so fortunate."

"What others?"

"Several men have been tested, but they failed to supply the high potential needed. They collapsed at the contact."

"You mean they're dead. You killed them."

"They were of no use to us."

"Us? Just who are you?"

"We are an ancient race on the eleventh satellite of this sun."

"This solar system has only nine planets."

"It has twelve. Your astronomers have not yet discovered the outer three. Yours is a young race, but a very ingenious one, with a magnificent future."

"Glad you think so. There has been some doubt about it lately. But I don't want to hear about my race. I want some information about yours. If you're visiting here without a permit, you're violating the rules. And the least you can do is explain your-

self." I managed to look belligerent in spite of the dizziness. It was hard to keep my balance in a place that seemed to waver and drift like a fog.

"You have not yet made the rules that would prohibit my visit," she replied calmly. "You have no laws governing extra-dimensional space, have you?"

"No. But that cat was—"

"In your dimension. Yes. Sela is one of the material life forms preserved on our planet to produce and reproduce living energy. Sela also acts as our anchor here, and was specially bred for that purpose."

"Then it was the cat who killed those other men, and we do have laws governing killers."

"Only in your three-dimensional sphere. But Sela is free to pass through the dimensional barrier at will, and cannot be touched here."

"Why not? I came through the barrier."

"Not voluntarily. So long as you do not resist, it is possible to transport you bodily through any atomic structure. If you had been conditioned as Sela has, through countless generations, you would be able to do it voluntarily. But in your present state there is a mental and physical block which prevents it." She moved languidly, like a sinuous dancer. "And now I have told you enough."

"Not quite. If the cat is a material life form, then you are not. You are not anything but a bad dream."

"I was created especially for you." Waves of sensation pulsated gently.

"For me?"

"For a high frequency cycle like yours."

"Whoever created you could have done a better job. You look like something off a billboard with exaggerated shape and coloring, strictly for advertising purposes."

"Your criticism is unwarranted. I

am a composite image of the ideal feminine beauty as conceived in the minds of your own generation. The image is certainly not our idea of beauty."

"What would your idea be—a hunk of smoke?"

"Our race has evolved far beyond anything yet conceived by your flesh-and-blood world." Her voice was very soft and cold and contemptuous. "We have passed beyond matter and into the realm of pure energy. But we are able to assume the appearance of any form of life not opposed to our own nuclear structure, and this includes speech and habits, as you have noticed. Indeed, you are trying to resist me now by making me angry, using the same tactics you would use on one of your own women. But it is quite useless. You cannot evade my purpose."

She was moving toward me with that avid gleam in her pale lavender eyes, and a powerful electro-magnetic force was set up. I groaned sickly as her movements took on meaning and purpose. It was beginning again, the weird ritual she had taught me in my sleep....

I OPENED my eyes weakly and the strong daylight blinded me. I was limp and sick, and too feeble to move. I didn't know where I was, and I didn't care, but a remote sense of anger was prodding at my numb brain, pushing me back to awareness.

Gradually I became aware of the hard rock under me. My eyes became accustomed to the daylight. And there was a strong smell of whiskey. I was lying beside the massive granite boulder, and it seemed that no time had passed since I had followed the green cat through the barrier.

The wailing wind had died down temporarily and I distinctly heard the

scrape of shoe leather on rock. I turned my head and gazed blurrily at a moving figure. My sight focused slowly and I saw Miss Dougherty coming toward me. Her white face was both angry and frightened. And something like human emotion stirred in me sluggishly. She was my salvation, but she was walking into unknown danger.

"So that was it," I mumbled thickly. "She was the interference that interrupted the ritual...."

I remembered Mahgra's fury and sudden decision that I must be returned in order to break the tie that disrupted the project.

She was the tie—this slim, dark, arrogant creature coming toward me like an avenging angel. But she was all too real and vulnerable to combat the other-world forces which had seized me.

I rolled over and tried to get up and fell flat on my face, and then she was bending over me, touching me and grasping my arm.

"What happened to you?" she demanded.

"Go 'way," I mumbled.

"You're drunk! No wonder your camp is a wreck. You fool!"

"No—no, I'm not. It's dangerous here. Go 'way, before I hurt you."

"I'm not afraid of you, you poor jackass. If I'd known you were a drunk—"

"I'm not—I'm not." I was almost sobbing with weakness, and the futility of trying to make her understand. "It's in my hip pocket. It broke when I disintegrated—disconnected—disappeared—oh, hell! Go away, will you?"

"No. I can't leave you up here in this condition."

"All right. I'll go with you—"

THE WIND whistled around the boulder and flung gravel into my

face as I tried to get up, and then it seemed to come from everywhere at once with whirlwind suddenness. We were flung together and clung desperately as the wind increased in fury.

"It's no use," I gasped. "I can't get away, but you—"

"Not in this wind, my friend," she replied tartly. "It's not even safe to stand up. And there goes everything!"

I looked through the swirling debris and saw the 'copter being nudged rapidly out to the far edge of the plateau. It teetered there on the rim momentarily as if terrified, and then jumped off as if it had been pushed. A large sheet-like thing which was my tent went screaming after it, then several miscellaneous objects, and finally a full box of equipment was hurled savagely after the departing necessities. I watched it all go without any emotion at all. I felt empty and hopeless.

"You are certainly proving to be damned expensive," Miss Dougherty shouted at me. "I doubt if you're worth it. If you're able to crawl, we'd better head towards some kind of shelter."

Even in my dulled condition, the way she said that hurt. It was so nervy, so courageous in the face of disaster. I started to crawl back to the slope that rose from the plateau. I didn't say anything, but she came along with me, gasping and battling the crazy wind.

It was a slow and laborious journey. The rocks cut our hands and knees and we were pelted with gravel and stones and even branches from the tortured cedars. I didn't expect to reach the haven, but I went on doggedly because she was there beside me, and finally we did reach it. It was a small cave which I had investigated during my frantic search for the source of my itch. I knew what it was now, and either I was

getting used to the itch or its effect was wearing off. Instead of burning up, I was now chilled to the bone and my teeth were chattering.

The light was dim in the cave and we lay there for a while, grateful for the shelter and a chance to get our breath out of the strangling fury of the wind.

"That insane wind is dying down," she said at last. It was changing to a long, steady moan that went wandering around the mountain as if it had lost something.

She stirred and sat up. "Cigarette?"

She was holding out a pack of cigarettes, but when I tried to take one my hand shook so wildly I couldn't get it. She snatched the pack back, lit one and handed it to me.

Her lighter flashed at the tip of her own cigarette and her face was printed against the dusky gloom. Her eyes were glowing and her skin had a healthy flush from her recent exertion. She looked beautifully sane and normal, and not as angry as she sounded when she snapped: "What's the matter with you?"

"A ch-chill," I chattered. "You'd better stay as far away from me as possible. I've had a funny kind of inflammation and burning itch all day. You might c-catch it."

INSTEAD of moving away she leaned over and unbuttoned my shirt and examined my chest and abdomen. Her hands were warm and soft.

"H'm," she said professionally. "Scarletina maybe. Not dangerous if you don't catch cold on top of it. You'd better try to keep warm."

She knew what to do about that, too. She put her arms around me, and I threw the cigarette away.

"Don't waste it, you fool!" she scolded.

I pulled her closer and pressed my

face against soft wool.

"Why did you come back here?" I muttered.

"Because you forgot something when you unloaded your gear."

"I did? What?"

"The camp stove. You left it in the 'copter."

"That wasn't mine. I don't use a camp stove."

"It was added to your gear when we loaded it. I thought you might need it up here."

"So you came all the way back here with it. You knew there wasn't much fire wood up here. What else do you know about this place?"

She took a drag on her cigarette and said huskily: "I may as well tell you now. I would have told you before, but you were so antagonistic and rude. Two of our local men were killed trying to investigate this place. That's why I went to Chicago and asked for someone like you."

"Someone like me."

"Someone big and tough and able to handle himself in all kinds of country and under any conditions. And someone who was an expert in electronics. According to George Bell, you filled the bill. I flew you in here myself because nobody else was willing to do it, and then I..." Her voice trailed off and I could feel her breathing, warm and soft and real, and smell the tobacco smoke when she drew on her cigarette.

"I wasn't really concerned about the stove," she said finally. "It was you. I had to know if you were all right up here alone."

There wasn't anything I could say to that. My arms tightened around her as warmth came into me. After a while I slept.

When I woke up it was black night and the lonely wind howled at the mouth of the cave like a hungry wolf

wanting in, and there was a hunger in me, too. An insatiable hunger for the life force in the warm sleeping woman.

A LONELY horror washed through me sickly, and I knew it was better for her to die quickly and quietly in her sleep. Because I had acquired the hunger of an evolved race without their ability to satisfy it. I knew from my own experience how they extracted the vital essence. Through a long process of evolution the alien race had developed the ability to absorb living energy without physical consumption. But I had no such complex gifts, and the only way I could satisfy the driving hunger...

Human revulsion fought with the alien appetite which craved to drain her life like a feasting vampire. It was better for her to die at once, and never know the horror. The wind screamed like a witch: "*Now! Now!*" And I knew it had to be done quickly before I succumbed to the new and terrible hunger.

My hands fumbled and found her soft, throbbing throat, and instinct as old as the race turned her toward me and her warm hands touched my taut face and slipped around my neck. She was murmuring softly, "You clumsy lug..." Her lips touched mine with soft fire.

The mountain trembled and the wind was terrible, and the black chaos of the night was like the beginning of creation when natural forces battled to achieve life on the threshhold of alien darkness. And as it was in the beginning, the black wind was defeated and retired whining lonesomely.

After a while I found the crumpled pack of cigarettes in the pocket of her leather jacket, and got two lighted. Her slim hand came out of

the gloom and I kissed it before I put the cigarette in her fingers.

"They didn't count on nature," I said softly. "They have evolved too far, and didn't realize that nature is stronger than all their artificial forces."

"They?" Her throaty voice came out of the darkness with a tender amusement.

"Aren't you aware of it—of the alien force? Didn't you hear that wind?"

"I heard it. I've never known it to be so wild. But I think that explains what happened to the other men when they fell. They were crushed."

"Crushed? How?"

"They didn't just tumble down a slope. They were blown off, and the drop killed them as if they had exploded. It was ghastly. That's why nobody else wanted to attempt it."

"They did explode," I said slowly. "Because they were not susceptible to the alien forces. All I got was a slight contact burn."

"You sound delirious. Are you feverish again?" Her hand touched my face softly, and I gripped it.

"No, I'm not delirious. Listen..." I tried to tell her about it, from the beginning when Mahgla came to haunt my dreams.

"And you actually saw her up here?" Her tone was indulgent, and still tenderly amused, as if I were fabricating this elaborate tale for her special benefit.

"I love you," I said simply. "But I am not trying to glamorize what happened to us, or excuse myself. I'm not making this up to amuse you. I want you to protect yourself from a terrible danger."

IN THE faint glow of the cigarettes her face was a pale patch in the darkness. It turned away from me

and her hand groped over the rough floor. There was a light click of metal on rock and she turned back to me.

"I have a gun," she said dryly. "I can protect myself from danger—if I want to. With copper-jacket slugs."

I touched her tangled hair and kissed her gently. "You could have used it on me," I said, "but it won't hit Mahgla. You interfered with the purpose for which she was created, and I was sent back here to destroy you. I almost did, but nature intervened. And I know now that my terrible physical craving was a clever distortion of natural functions. But they may be able to devise another method."

"What's delaying them?" she asked with grave humor.

"I am. They don't want to destroy me just yet. Only you. They believe that certain of their own ancestors had the same electro-magnetic vibration as mine, from which they evolved. And Mahgla's ritual was designed to drain me of the vital forces, preserving my physical and mental energy, which would give them the living intelligence they lack. That was what 'was the matter with me when you found me."

"You were drained?" she said indulgently.

"No. The process is comparatively rapid, but it had barely started. Please don't laugh at me. I know that this project is vitally important to their existence. And now that they have found what they want, they won't give up. I think they may have concentrated their entire racial energy on the project. That's what I've got to combat."

The serious tone seemed to impress her, she moved closer into my arms, and I was momentarily distracted by a rush of warm, throbbing tenderness. "There you go," she scolded, "wasting another cigarette."

"Did I? What was I saying?"

"Combat." She put her head on my shoulder and sighed. "Go on. I'm very susceptible. I think I'm catching whatever you've got. I'm beginning to believe it, too. You big lug."

"You've got to believe it!" I shook her roughly. "Listen. The danger, as well as the weakness of the project, lies in the cat. The beast is a living dynamotor. If I could destroy that... Can't you picture a process of evolution which would eventually reach the ultra-refinement of pure energy, and be static in a kind of perpetual ecstasy?"

"Not without physical support."

"Exactly. In their own process of evolution they developed certain forms of animal and plant life to provide the vital energy they need for existence. Don't you see what's missing?"

"Sex?"

"Well, yes. But they no longer need to reproduce themselves. They are static. They have allowed themselves to evolve into a final state far beyond the basic conditions for intelligent life. And that is what is missing—the crude basic knowledge, the human know-how."

"What's crude about knowing how?"

"It's crude to them. They are able to utilize unbelievable powers without knowing the fundamental concepts of those powers. That is what they have lost—the original physical knowledge needed to insure existence."

"How could they lose it?"

"It was lost because no members of the race were willing to stay behind and continue to breed the lower and more painful forms of life as a repository for the primitive physical knowledge. In their aspiration toward an ever higher form of existence, they eliminated the so-called inferior specimens who acted as a drag on their

progress, and thus cut themselves off from the possibility of renewal."

SERVES them right," she muttered indignantly against my shoulder. "What a dreadful picture of a selfish, inhuman race."

"Yes. That's what they have become through ultra-refinement. And now something has happened to threaten their existence. Perhaps the physical resources of their home planet are being exhausted, and they lack the primitive knowledge which alone can restore the physical equilibrium. And that is what they want from me—the living knowledge from a creature who closely resembles their own primitive ancestors."

"I can't see what good it will do them if they are beyond the physical ability to use it."

"It's obvious. They intend to breed a new race of primitives. Mahgra will transplant the human seed to some form of animal life. And through long generations she will teach them the basic knowledge absorbed here, a knowledge for which their brains will be inherently suited. And in time they will put it to use for the benefit of the original race, who will continue to live like gods—they hope."

"H'm," she murmured, and yawned noisily. "Let's go back to sleep, darling. You big lug. It's still the middle of the night."

She didn't believe me. She thought I had invented a fairy tale to add a romantic touch to an unconventional evening. She thought there was nothing to fear but the natural elements. And I had no way of defending her against an unknown peril. I had no way of knowing what new device might be used to separate us and destroy her. But I should have known.

"Please don't fall asleep," I said helplessly. "Where is your gun?"

"Here. You want it?"

"No. Hang onto it."

"Why?"

"I don't know why," I said desperately. "I don't even know if it's safe to stay close to me."

She laughed with rich delight, and something in the night went "Boing?"

I pushed her away and tried to scramble towards the entrance, but the cat was there, glowing like phosphorous. Its eyes were wildly bright, and its head moved from side to side like a wound-up toy.

"Shoot it!" I yelled. But the cat moved like a streak of light and knocked me flat. "Shoot!" I gasped.

"I can't shoot you," she screamed, and I thought wildly that she couldn't even see the thing.

But she saw it, and now she believed me. I wrestled the thing, trying to throw it off, but it clung like a magnet, and my body tingled with the effect.

"Whatever you do," I panted. "Don't let it get near you, or touch you. It's loaded with power, and you'll explode like those—"

The cat sank its teeth in my shoulder and the electric shock stunned me, and I felt the cat arching with the force, and heard a loud roaring explosion.

THREE WAS a brief blackness and then came a terrific discharge of heat, light and energy that seemed to go on and on, splitting the world in a final cataclysm....

I heard a tiny voice in a vast, empty silence saying over and over: "Can you hear me? Can you hear me?"

It seemed to me I answered, but the elfin voice kept on repeating its tiny thread of sound. And after a long while I felt the vast emptiness closing down, squeezing together, and becoming solid and I knew where I

was, and choked on bitter, metallic fumes.

"Where are you?" I croaked.

"Oh, Rango. Here." And there she was, lying beside me with one arm thrown across me.

Early in the morning the military planes started coming over, scouting the area. And much later three 'copters came in, and the Army climbed out in full battle dress.

We greeted them gravely and a red-headed lieutenant-colonel shouted: "What in the name of seven green hells is going on up here?"

"Electrical storm," I said. "Unusual phenomenon. Been getting weather disturbances up here for several months."

"Weather!" he snorted. "That was no weather, that was—" He looked around suspiciously and sniffed the dry atmosphere. "We got no radioactivity in the tests, so it must have been some other kind of—"

"You're welcome to look around. You can see where the lightning struck, over there. Broke off a big chunk of mountain."

"Yeah. I see," he grumbled, as if he didn't believe it.

An Army medic stepped closer and peered at us. "Looks like you two got singed," he muttered. "Better have an exam—"

"No, no. Thanks, Captain. We're okay. Jarred us a little; and we felt the heat, but we were under shelter. In a cave."

I didn't want him to see the strange black holes in my shoulder where the cat had sunk its teeth. We had had plenty of time for sober reflection, and realized that it would be a mistake to tell the real story. A thing like that could start a panic—or get us both locked up for observation. And the danger was past. There was no doubt about what had happened.

WHEN THE cat sank its teeth in me and arched its back with the force of the shock, she had shot it twice. And that was the end of the project. Two copper-jacketed slugs tore into the cat's vitals, death released its grip on my shoulder, and the short circuit resulting from the slugs burned the highly charged animal to a crisp. The tremendous energy concentrated in the project was dissipated in one gigantic flash when the cat was destroyed. Because these highly evolved beings lacked a knowledge of simple physics, they were unable to cope with a physical world which held the secret of survival, and nature took a terrible revenge.

I bought a new camping outfit, and sent George Bell a wire: "Leaving for month's vacation with pay starting today. Regards. Rango Will."

I knew better than to talk to him on the phone. The silver-tongued slicker would figure out a job for me to do on my honeymoon. We were going fishing. That's what we said. We really wanted to get away from everybody, and get used to living with our big secret. In time we hoped to be able to divulge it to the proper scientific authorities.

We headed west in my beat-up jalopy because I refused to travel in any of the fancy Dougherty vehicles. We were going to stop off on the way and be married quietly to avoid the fuss and publicity. It was all done very hastily and we didn't say much for the first fifty miles, and then she sat up and looked at the junk piled in the back of the car.

"Rango, dear," she said authoritatively. "I hope you didn't forget the camp stove again. Damned if I'm going to cook three meals a day over a smoky wood fire."

"Miss Dougherty," I said grimly. "Before I marry you, there's one thing I've got to know."

"What?" she bristled.

"What the hell is your first name?"

"Oh!" she gasped and choked down a laugh. "It's Geraldine, darling."

"Geraldine," I said approvingly. "All right, Geraldine—shut up. If I want to camp without a camp stove, that's the way I'll camp. Understood?"

"Yes, darling." She settled down and put her head over on my shoulder. "But you did bring it, didn't you? For me?"

"Uh-huh. I brought everything you need—Geraldine."

THE END

YOU CAN ALWAYS USE IT! By JACK WINTER

EVERY DAY knowledge is discovered by fundamental research which does not for years find practical application. Often a phenomenon may require deep study before anybody can find a way to put it to use.

An interesting example of the lag between a discovery and its application is the photoelectric effect. In 1887, Hertz observed the emission of electrons by certain materials under the influence of light, and a year later a deeper study was made by Wilhelm Hallwachs.

In 1905, Albert Einstein showed why one must assume a corpuscular as well as a wave theory of light. This effect was

studied largely for its theoretical significance. It was destined for practical use, however, since it was one of the most important phenomena demonstrating the dual aspect of nature in partaking at once of wave and particle properties.

During the last twenty-five years, the applications of the photoelectric effect are a part of our daily living: door-opening mechanisms in department stores and railroad stations, many automatic devices used in industry, etc. In the future, this may be one of our most frequently used applications—personalized photoelectric units for opening house doors and those of automobiles!



"But I love you, Jerry," she cried. "And now I have to tell you the whole truth!"

If you have a body buried somewhere, don't
read this story. You'll find yourself confessing—
not from a guilty conscious, but by reason of . . .

A MORE POTENT WEAPON

By

Rog Phillips

FRANK SIMS felt among the dried leaves that covered the secluded spot until his fingers encountered the iron ring. Gripping it, he lifted carefully. Four square feet of innocent ground hinged upward. He reached with his other hand into the opening and brought out a stick, using it to prop the trapdoor up at a thirty-degree angle.

Two ordinary suitcases came out and were laid on the ground. Ten minutes later a strange-looking device had been assembled, one which would have been of great interest to the United States Government.

Frank carried it carefully, following a path that led to a little knoll at the edge of the woods. The knoll overlooked a stretch of rock-strewn ground at the base of a hundred-foot cliff.

At the highest point of the knoll Frank finished setting up the apparatus.

It consisted of at least a hundred small microphones in a frame that placed them in the surface of a concave lense. Fine wires connected all the microphones to a small cable that led to a portable radio of a standard make. The microphone setup was on a tripod which he had planted firmly in the shallow soil.

Frank Sims turned the radio on and waited until soft music began to whisper from the loudspeaker. Then he turned a knob and the music instantly shut off.

Now, he pivoted the microphone frame so that it focused on the face of the cliff, turning it experimentally here and there. Surprisingly, sensible sounds came from the radio. The sound of cars speeding along a road, growing loud and dying quickly as though they were very close. Abruptly, voices sounded. With an air of satis-

faction, Frank stopped moving the tripod and listened.

The Government would have been very interested in what he was listening to. So interested that they would have possibly blown up the cliff, not to mention executing Frank Sims on the spot, because Frank Sims was actually Frank Semnovitch, and the United States and Russia had been at war for the past month. The voices coming so normally through the loud speaker of the portable radio originated two miles away on the heavily-guarded grounds of an atom plant.

At the particular spot where Frank was standing, the broad face of the cliff was throwing back the inaudible whispers of those voices, focusing them so that, though still inaudible to human ears, they could be picked up by the array of sensitive microphones and amplified to audibility through the amplifying section of the portable radio.

BUT, THOUGH Frank could hear ordinary conversation in the heart of the atom plant grounds, there was no way he could see those grounds. So all he could do was sit and listen, hoping that something might be said that would be of value to Russia....

"...drop over to dinner some evening, Jerry," Dr. Bowling said, unaware that his voice was being heard two miles away.

"Thanks, Dr. Bowling," Jerry Graham said vaguely. "I'd like to. Can't this evening though."

"Any evening," Dr. Bowling said. "Just let me know a few hours ahead of time so that I can tell the wife."

The phone on his desk buzzed. He turned away from the open window to answer it. A moment later he turned to Jerry.

"Let's go out to Pile Seven," he said. "Something strange going on.

Sudden temperature drop of two degrees."

The two men hurried from the office, down the stairs and out onto the blacktop-covered grounds. They went past several squat concrete buildings to one that had the numeral seven painted on its windowless wall.

They entered a small lean-to structure huddled against the concrete-enclosed atom pile, and were immediately in a room filled with panels on which recording charts glistened.

The technician who had called them pointed wordlessly at one of the recording charts. The inker stood motionless on the chart. Originating under its point and forming a semicircle around the center of the paper dial was an inked line. The last quarter of an inch of the semicircle was of slightly smaller diameter than the rest. According to the time coordinates of the chart, the temperature of the atom pile had dropped unexplainably almost an hour before.

Now, as they stared at the chart, trying to guess what might have happened, the needle awoke from its motionlessness and slowly moved the almost infinitesimal distance to bring it back to normal again.

And on the roof of the atom pile building, unnoticed, a small ball of brilliant white light, somewhat dimmed by competition with broad daylight, emerged from the tarred surface like a bubble breaking water, and floated upward, seemingly carried by the summer breeze....

"WATCH OUT, Alvin!" his wife screamed.

Her head banged against the windshield as Alvin straightened his leg against the brake pedal and twisted the steering wheel.

"God, I won't make it!" he breathed.

The intense blue-white light bearing down on him on his side of the highway was suddenly blindingly close. He let go of the wheel and cupped his arms in front of his face in preparation for the inevitable crash.

The car seemed to leap upward. There was a screaming sound. He felt himself jerked forward. His chest hit the steering wheel painfully, seemed to bounce. Then he was sprawled over his wife and there was neither sound nor movement.

He lifted his head, waiting for the sharp pains of broken ribs. When they didn't come he braced a hand against the door and lifted himself up.

"Ohhhh," Mary groaned from her doubled-up position.

Alvin sat up, expecting pains with every movement; pains that didn't come. Dazedly he began to realize the incredible: he wasn't hurt at all!

His eyes registered the fact that the windshield wasn't even cracked. The headlights still burned brightly, revealing tall stalks of corn ahead of the car.

He jerked around to look through the rear window. The blinding headlight that had made him swerve off the highway into the cornfield was still there. It was in the center of the pavement, turned so that the lone light still shone directly at him.

He squinted his eyes to see the car behind that glaring light. What he saw made him grunt in amazement.

"Ohhhh," Mary groaned again.

He looked down at her, out at the tall corn surrounding the car.

"Shut up, Mary," he said callously. "You aren't hurt."

"I'm not?" her voice came weakly. "I'm not?" It was outraged, indignant. Angrily, she sat up. Her anger was overcome by the realization that she had succeeded in sitting up. "I'm not!" It was amazement and relief.

"There's some kind of a damn light out there on the road," Alvin said.

He opened the car door and got out. The bright spot of light in the road cast as much illumination as a street lamp, revealing the tracks left by his car. Alvin glanced at the tracks, whistling. The car had plunged off the concrete, up a steep three-foot embankment, and through a barbed wire fence, clearing the top strand of wire without breaking it.

HE RAN down the embankment to the edge of the highway and paused, squinting at the light. So far as he could see, there was nothing that it could be attached to. It hung stationary in the air about five feet off the pavement, lighting up the unoccupied concrete underneath it.

"What is it?" Mary's voice came from behind him.

"Damned if I know," he muttered. "Doesn't seem to be any bulb around the light."

He stepped out onto the pavement and walked slowly around it while Mary watched him. She saw him walk around the light, then approach it. He passed his hand over it and under it.

"Damn thing's just hanging here by itself!" he said. "Wonder how hot it is."

She saw him reach out cautiously toward it, ready to jerk his hand back.

"Careful, Alvin!" she said sharply. One of his fingers seemed to dissolve into the outer fringe of the bright light.

"Ain't hot at all!" he said.

Mary saw the light go into his hand, its bright rays crowding through his fingers and outlining the bones with red flesh.

"Got it!" Alvin said triumphantly. "Whatever it is, I've got it!"

He swung his hand in an arc. The thing stayed within his clenched fist, making the entire hand seem on fire.

"Maybe it's radium!" Mary said fearfully.

"Nonsense," Alvin said. "Think anybody'd leave a million dollars worth of radium here on the highway? But maybe it's one of those new atom weapons, bounced out of some army truck that passed here. Doesn't seem to have any weight. Guess we'd better put it in something and take it along with us—if the car'll run. You stay here by the highway while I see."

He started up the embankment. Suddenly there was a muffled noise. Half a mile in the direction they had been driving a mass of billowing flames and smoke erupted, outlining trees.

Alvin stopped in his tracks and stared. He looked back at Mary.

"My God, another bomb," he said. "I hope the car runs."

He hurried to the car. It started immediately. He backed carefully. The strand of barbed wire the car had skipped over before broke as he went over it now.

On the highway once more, Mary climbed in beside him.

She blinked her eyes. "You can't hold that thing in your hand and see to drive," she said.

"I don't intend to. You hold it."

"Not me! Put it in something."

"The glove compartment," Alvin said. He popped open the door and pushed his fist in, spread his fingers, and pulled them out. "That'll hold the danged thing."

When he slammed the glove compartment door shut, light was spilling out from every crack and pinhole in it.

"Hurry," Mary said. "Someone up there might be hurt."

He started up, going slowly at first, then speeding up until he passed the trees. The flames were a gigantic mushroom of smoke and light. The

highway went ahead straight until almost where the hidden source of the fire was, then turned sharply under the railroad.

A man stood in the middle of the pavement, flagging them down by waving his arms. Alvin slowed to a stop beside the man.

"What happened?" he asked, lowering the window.

"Accident," the man said. "My gasoline truck skidded when I was turning under the viaduct. It knocked me out. I came to and got up here just before the explosion. Good thing you didn't come along five minutes ago. You couldn't have seen the truck and would have ploughed right into it going under the viaduct."

Alvin and Mary looked at each other, then their eyes went slowly to the glove compartment with its brightly etched lines of radiant light.

"**M**ORNING, JERRY," the waitress said to the young man frowning at the menu. "How's things over at the atom plant?"

"Morning, Helen," Dr. Gerald Graham said, looking up and smiling at the pleasant girl. "The atom plant? Fine. Just toast and coffee, please."

They both turned their heads toward the door as it burst open.

"Hear about the accident down the road last night?" the man who came in asked.

"What accident, Frank?" Helen asked.

"Gasoline truck folded under the viaduct ten miles south," Frank said. "Caught fire and blew up. Nobody caught in it, though. Hi, Jerry. How're the atoms this morning?"

"Never better, Frank," Jerry grinned. "Join me."

Frank sat down on the stool next to Jerry. "Coffee," he ordered. Then he glanced at Jerry shrewdly. "Haven't

been losing any atom bomb materials lately, have you?

"Good heavens, no!" Jerry laughed. "Whatever gave you that idea?"

"I heard a rumor that some motorist picked up a chunk of plutonium on the highway half a mile beyond the viaduct where the gas truck blew up. Sort of a dumb fool, the motorist. He picked it up and carried it around in his hand. Even used it to flag down the two o'clock freight this morning. Now they've got him over at the hospital with a badly burned hand. The stuff didn't feel hot, and he was too stupid to know that radiation doesn't feel hot."

"Where's the stuff now?" Jerry asked sharply.

Frank shrugged. "In the glove compartment of his car. It's parked by the hospital. The cops have it roped off, but I got a peek. Looks like a flashlight left turned on in the glove compartment."

"You say it was laying on the highway half a mile beyond the viaduct?"

"Not laying," Frank said. "At least, this guy says it wasn't. He says it was floating in the air a few feet off the pavement. He thought it was the headlights of an oncoming car and ran off the road to avoid it. That was just before the explosion."

"That part at least is nonsense," Jerry said. "You say you saw something shining in the glove compartment?"

"Just the light spilling out through the cracks. The door was closed."

"Jerry," Helen called from the back of the cafe. "You're wanted on the phone."

"Police called the plant," Jerry explained when he returned from the phone. "They're sending out a truck to take care of the stuff. It'll be by to pick me up in a minute."

THE POLICE had a cordon around the parked sedan, holding back the ring of people to a distance of a hundred feet.

A moment after Jerry arrived in the police car, the truck from the plant drove up, looking very military with its army color and large numbers on the sides.

Jerry glanced at the equipment resting on the back of the truck and lifted his eyes in surprise. They had done a quick job of loading a remote control outfit on such short notice.

"I'll get in the control cubicle, then you back the truck to a position near the right hand door of that car," Jerry said. "I think I can open that door and the glove-compartment door and take the stuff out."

"Should I make the crowd get back farther?" the police captain asked.

"Just don't let them get any closer," Jerry said, swinging up onto the back of the truck.

He climbed into the small space of the control room. He saw it was a new remote control unit.

The arrangement of mirrors brought him a view of the outside. He noted with satisfaction that a lead block had been placed on the back of the truck, with a hollow in it for depositing the stuff, and a plug to seal it in.

When the truck had backed into position he began working the remote control arms, deftly opening the car door. A steel arm with delicate steel fingers opened the glove-compartment door, and abruptly Jerry's interest awakened. Brought to him via several successive mirrors was a brightly luminous object.

He carefully sent steel fingers about it and lifted it out. Two minutes later it had been safely sealed in the heavy lead block and the plug dropped over it.

He stepped out of the remote con-

trol unit and jumped off the truck onto the hospital lawn. He went to the cabin of the truck.

"Did you bring a Geiger counter with you?" he asked the driver. The driver nodded and handed him a familiar small box. "Good!" Jerry said. "Take a police escort and go back to the plant. I'll be along later. I want to get this car off the street first."

As the truck started up, Jerry turned on the Geiger counter and pointed it at the car, placing the earphones over his head.

He went slowly toward the car, listening to the slow clicks in the earphones. Finally he had the Geiger counter pointed directly into the glove compartment. The slow clicks in the earphones hadn't changed.

"No sign of radiation!" Jerry muttered.

He slammed the car door closed and looked around for the police captain. The captain came toward him.

"Have this car towed to the plant," Jerry ordered. "And have someone take me to the doctor in charge of that fellow who handled the stuff."

Fifteen minutes later he was closely inspecting Alvin's hand.

"You can see signs of radiation burns already," the doctor was saying.

"Must be," Jerry agreed. "But no sign of radioactivity on the hand." He shut off the Geiger counter and grinned absently at Alvin. "You'll have to stay here indefinitely," he said. "Your car is being taken to the atomic laboratories just outside of town. It may take several days before the full effects of the radiation burns come out." He turned to the doctor. "You'll keep us informed of developments?"

"READY?" Jerry said crisply.

The several men around him nodded. Geiger counters were pointed at the block of lead from various dis-

tances. Movie cameras behind concrete shields were grinding away, ready to photograph the spectrum of the radiation from the mysterious object.

"O.K.," Jerry said. "I'll lift out the lead plug."

In the set of mirrors he watched the steel fingers under the pushbutton control panel in front of him lift out the cone-shaped plug.

When it was almost all the way out, light spilling out around it with glaring brilliance, he stopped the steel fingers.

"No radiation!" one man said unbelievingly.

Jerry touched a button. The lead plug dropped back, sealing the thing in again.

"Get those films developed," he ordered. "I want to see what the spectroscopic analysis shows."

Twenty minutes later he was comparing standard films with those that had just been developed.

"Oxygen, Nitrogen, Carbon, Lead," he said. He looked up at Dr. Bowling. "Have you noticed something peculiar about these shots? No deep reds."

"I noticed," Dr. Bowling said. "And nothing significant otherwise. Those lines are just the lines of the elements in the air and the lead from the block."

"That isn't significant?" Jerry said. "Did you ever hear of anything able to heat the air around it without throwing out radiation of its own? According to everything we know, this stuff must be composed of the elements the spectrum shows."

"Yes," Dr. Bowling said, "but according to everything we know, those spectrum shots are impossible. Nothing below the orange. It's cold light. And I'd guess there's five hundred watts of it, at least. Where does the energy come from, with no sign of radioactivity?"

"Well," Jerry said, "we can perform another test. We can weigh the stuff."

Fifteen minutes later he and Dr. Bowling and the others studied the reading of the scales, mystified. They read a hundred and twenty-four pounds, fourteen ounces. The exact weight of the lead container as stamped on its outside.

"And another thing," Jerry said irrelevantly. "If it was shooting off five hundred watts of power, or even fifty watts inside that lead block, it would be heating it up." He placed his hand on the block. "It's positively cool," he said.

"You're right!" Dr. Bowling said, placing his own hand on the lead block. "It seems to defy everything we know."

"The condition of that tourist's hand ties in with what we've found out so far," Jerry said. "It seemed to be no more than badly sunburned. We've found that the thing emits no red or infrared radiation, and isn't radioactive." He stared at the silent faces around him. "And I can't get the thought out of my head," he went on, "that according to what that tourist said, he would have ploughed into the gas truck about the time it exploded if this thing hadn't made him stop."

"Are you implying the thing can think?" Dr. Bowling asked sharply.

"Well," Jerry grinned, "we've tried every other test. Let's give it an intelligence test!"

Dr. Bowling and the other technicians laughed.

"How are you going to do that?" Dr. Bowling asked.

"We can take it into one of the concrete rooms down in the basement of this building," Jerry said. "Then we can let it out of the lead case and see what happens. It should be easy to find out if its movements—if any—are directed or not."

"That would be a start, anyway."

"Jerry's right," one of the technicians said. "That would be a definite start."

"It sounds silly," Dr. Bowling said, "but—well, O.K.!"

Half an hour later, in a room with walls and doors of solid concrete with even an air renewer in it so that there would be no need of any sort of opening, Jerry lifted out the plug, setting the glowing center of light free.

Still holding the lead plug in his hand, he retreated quickly to the other side of the room with the other technicians, his eyes on the lead case from whose top light streamed in an intense blaze.

FOR SEVERAL long seconds nothing happened. Then slowly the cone widened. The ball of light came into view, emerging from the hollow space inside the block.

The ball of light seemed to be about two inches in diameter. It rose slowly straight up until it hovered a foot above the lead block.

"So far its movements aren't intelligent," Dr. Bowling said.

"They at least show the thing either has no weight or can defy gravity," Jerry said.

"Here, kitty, kitty, kitty," a technician said nervously, bringing a chuckle from the others. And the ball of light wavered slightly as though it too were laughing.

The laughter subsided. In the silence the light rose higher, seemingly drifting.

"You know," Dr. Bowling said worriedly, "this is an extremely risky business. We don't have the least idea what force is focused in that thing, but whatever it is it's atomic in nature, and there're radiations bathing us that we haven't measured. Hard radiations. How are we going to get

it back in the lead container again?"

"Simple," Jerry said. "We've gone this far. I'll pluck it out of the air."

Without waiting for objections he went forward and reached for it. It evaded his clutching fingers gracefully.

"Simple!" one of the technicians taunted.

Jerry turned in the man's direction. "Why don't you try it yourself then?" he challenged. Suddenly, the faces watching him froze with surprise and horror.

"What's the matter?" he asked.

"It's gone!" a voice croaked. "It went into your head!"

"What're you talking about?" Jerry said. He turned back to the ball of light. It had vanished. "Where'd it go?" he asked, searching about him.

"Into your head!" the technician shouted.

"Quiet down," Dr. Bowling's voice came calmly. "It couldn't have done that. What's happened is that it's burned out, whatever it was. If it had gone into Jerry's head he'd feel it."

"Sure," Jerry said, "and I don't feel a thing."

"I tell you it went *into* your head!" the technician insisted. "I saw it!"

"Nonsense!" Jerry said sharply. "What's happened is very simple. It has shut off its field. The light it produced was simply the effect of the repulsion field on atmospheric atoms, reversing their momentum relative to the field focus and transferring the energy of reversal into quanta of light."

"What gave you that idea?" Dr. Bowling asked sharply.

"Why—nothing," Jerry said. "It's obvious, isn't it? It wasn't radioactive, yet it produced light. The light was of the spectra of the atoms that should have been striking the focal area. The light originated entirely from impinging molecules, or supposedly impinging

molecules. It's—it's as obvious as the nose on your face!"

There was a dead quiet.

"You say, '*it* has shut off its field?'" Dr. Bowling said gravely. "What is *it*?"

"Why—I don't know," Jerry said. "But if it had gone into my head I'd feel it, wouldn't I? And I don't feel anything."

"But it did. I saw it," the technician said earnestly. "And—you're *different* now." He stared at Jerry with eyes wide.

"**M**AYPE we'd better go back to the office," Dr. Bowling said abruptly. "And, Jerry, I'd like to see you alone for a minute."

"O.K.," Jerry said. "The rest of you run along. We'll be with you shortly."

The motor whined as the heavy concrete door opened.

"Jerry," Dr. Bowling said after the others had filed out. "I wanted to tell you that I—I played a dirty trick on my wife last Saturday night. I...well...I may as well tell you the truth. My secretary and I, we've been sort of...ah...intimate, on occasion. It won't happen again. I'll square the whole thing with my wife just as soon as I get home tonight. Will you forgive me?"

"Huh?" Jerry said. "Will I forgive you?" He started to laugh, then saw the deadly serious expression on Dr. Bowling's face. "Of course, Dr. Bowling. I'll forgive you. Do you love your secretary?"

"Oh, no, no," Dr. Bowling said quickly. "I love my wife. It was just one of those things, you know." He laughed hollowly. "I knew it was wrong, of course, but now I realize I had to have your forgiveness, and also confess it to my wife and get her forgiveness. You really forgive me?"

"Sure," Jerry said, looking at Dr. Bowling queerly. "Of course I forgive

you. Don't let it happen again though." He laughed self-consciously, but when he looked at Dr. Bowling there were tears in that man's eyes.

"Thank you, Jerry," Dr. Bowling said. "I can't tell you how happy you've made me."

"Let's go back to the office," Jerry said, his voice sounding both kindly and frightened at the same time.

Dr. Bowling dropped to one knee and seized Jerry's arm, kissing the sleeve. As quickly, he rose to his feet again and preceded Jerry out of the concrete room. Jerry followed and pressed the button that started the motor again to close the massive door.

The other technicians were waiting at the foot of the stair well, their faces pale and their expressions quite strange, Jerry noticed.

"Jerry," one of them said. Suddenly he burst into tears. "I've got to tell you, Jerry," he sobbed, "I'm wanted by the police in Grand Rapids. I stole three thousand dollars from a man and slugged him over the head. I just realized a few minutes ago that I must go back and confess and take my punishment—"

"I've been doing things wrong all my life," another broke in. "Jerry, I've just got to tell you about it and get your forgiveness, I—"

"I've done more wrong than anyone else," another spoke, raising his voice to drown out the others.

"All right!" Jerry screamed to make himself heard. "Shut up, everybody." Dead silence followed. "That's better," Jerry said more calmly. "What's wrong with everybody all of a sudden? What're you coming to me for with these stories? Have you all lost your minds?" He stared at the ring of faces defiantly. "I'd suggest..." An expression of glee crossed his face. "I'd suggest that you go back where you did wrong and confess to

those to whom you did wrong—and do whatever is necessary to make things right. Don't waste any time at it, either. Get going. If you hesitate, you're lost."

"Oh, thank you, Jerry," a chorus of voices said. Tear-brightened faces smiled at him.

Putting out his jaw he pushed through them, feeling their hands clutch at his coat. As he took the first stair step he glanced down and saw the last one kissing his coat as it slipped away from his fingers.

He reached the top of the stairs and stepped out of the building. He glanced at his watch; it was ten after twelve.

"Time to eat," he muttered uncomfortably.

HE STRODE across the grounds angrily and got in his car, slamming the door and gunning the motor as he backed out and headed for the gate.

The guard was trying to wave him down. Jerry saw the bright expression on the man's face and the eager way he waved.

"Oh, no!" Jerry muttered, speeding up and nearly running the man down.

Ten minutes later he strode into the cafe and walked to the back, sliding into an empty booth and slumping down. He saw Helen looking wide-eyed at him, but he kept his eyes turned away. He had a very uncomfortable premonition.

Out of the corner of his eye he watched her. He saw her glance down at the low neck of her uniform and reach up with a nervous hand to draw the collar together.

She picked up a menu, poured a glass of water and came toward him. He didn't look up when she placed the menu and the water in front of him.

"Jerry," she said, her voice tender.
"Yeah?"

"I—I know I've done wrong. I love you, and I've been trying to get you to notice my—my figure. Please forgive me. I'm not... worthy of you. I see that now. All I want is your forgiveness, and the privilege of—of—"

"How about getting me a cup of coffee?" Jerry broke in. What was this? He was thinking wildly.

"Yes, Jerry," Helen said meekly, turning away with bowed head.

"And Helen," Jerry called her.

She paused, turned to face him almost timidly.

"I don't see anything about your body to be ashamed of," he said defiantly. "Take your hand off that damn collar."

HE STARED after her departing figure, then straightened his head to find that someone had slipped into the seat opposite him.

"I hope you'll forgive me for sitting here," the stranger, a rather portly man in a smart business suit, said deferentially. "But I've just got to get something off my chest. I own a factory on the south side of town. I've been—well, to put it bluntly, I've been defrauding the government of thousands of dollars."

"What's that got to do with me?" Jerry asked, irritated.

"I wanted to tell you, and make a clean breast of it," the man said. "I'm going from here to Washington and confess the whole thing and make some plan for restitution. First, I've got to have your forgiveness. Please. Do you forgive me?"

Jerry stared at the rabbit-like expression on the man's face, the eager hopefulness. He realized suddenly that this was probably the first time in many years that the man had been

sincerely honest about anything.

"Sure, I forgive you," he said uncomfortably. "Go and—"

"Thank you, thank you!" the man said. He clutched Jerry's hand and leaned over the table, planting a wet kiss on it. When he raised his head there were real tears staining his flabby cheeks. He got up and left the cafe, dropping a bill at the cashier's cage and not waiting for his change.

"Here's your coffee, Jerry," Helen's meek voice sounded at his elbow.

"Look, Helen," Jerry said. "Sit down a minute. I want to talk to you."

She sat down opposite him, erect and with stars in her eyes. "Yes, Jerry?" Breathlessly.

"You say you love me and want to marry me?" he asked defiantly. She nodded mutely. "All right, I love you and want to marry you. This is a hell of a way to propose, but let's go out and do it this afternoon."

"Oh, that would be impossible!" Helen said.

"You want to marry me but it would be impossible?" Jerry said. When Helen nodded he went on, "What's the idea of leading me on then? If you're already married—"

"But I'm not!" Helen protested. "I'm just not—not worthy of you. That's all."

"Nuts," Jerry groaned. "You know something? I must be crazy. They say that when the rest of the world seems crazy it's always you, but you're the last to find out about it. That's me. I feel perfectly sane, but you're crazy, that crook that was just sitting where you are is crazy. Everybody at the plant is crazy. So the simplest answer is that I'm crazy."

"But you aren't," Helen said. "You're wonderful, good, kind holy—"

"That does it!" Jerry said. "If there's anything I hate, it's being kicked upstairs. Come over here and sit beside me."

"Yes, Jerry," Helen said meekly. She got up and slid in the booth beside him.

"Kiss me," Jerry ordered.

She lifted her face. He kissed her fiercely. Her lips remained limp under his.

"Kiss me!" he said angrily. Her lips responded.

When he drew away, tears were spilling from her eyes. There was a radiant smile on her lips. But her eyes were staring far away.

"Do you still think you're not good enough for me?" he asked angrily.

"Oh, yes!" she murmured. "I will always remember the divine bliss of this moment, my love."

"But you won't marry me?" Jerry said.

Helen shook her head dreamily. "How could I when I'm not worthy—"

"Shut up!" Jerry said. "I'll be back when you come to your senses—or I do," he added worriedly.

He pushed her gently out of the booth and got up. Without a backward glance he strode out of the cafe.

BUT I DON'T want any money!" the grocer said. It was half an hour later. Jerry had tried three different cafes and given up. He stared at the grocer, his sack of groceries in his arm.

"Look, mister," he said. "I don't want any trouble with you. Just add up what I owe you and let me pay it."

"But I couldn't!" the grocer said. "Do you smoke?" He grabbed several assorted brands of cigarettes off the shelf and started to put them in a sack.

Jerry planted a five-dollar bill on the counter and fled to his car. When he drove away the grocer was running out into the street, waving the money and trying to call him back.

"If this keeps up," Jerry mumbled to himself, "I'll be very glad to get locked up in a booby hatch."

He turned his car on the road. He knew he was going to be late getting back to the plant, but he had decided to stop somewhere under some trees, eat a can of sardines and some cheese, and drink some milk.

Five minutes later he was parked in the shade of trees, the nose of his car peeking over the embankment leading down to the river.

He emptied the groceries on the seat beside him, flattened the sack and laid it on his lap. He opened the sardines and spilled them onto a slice of bread.

He bit into the sardine sandwich, laid it down, and picked up the container of milk to open it.

Suddenly his eyes focused on the rear-view mirror. He swallowed loudly. Then, drawn as though by a magnet, yet resisting, he moved over in the seat to a spot where he could see his own reflection.

"God!" he breathed.

Reflected from the mirror was his own face, yet surrounding his head was a band of soft light. A halo.

"Funny," he said weakly. "I don't feel any different."

He sat eating his lunch, a thoughtful frown on his face.

"I won't go back to the plant today," he decided suddenly.

He chewed some more, his eyes studying the surface of the river.

"I'll call Helen and then pick her up," he decided.

Starting the motor, he backed up and turned around. He turned away from town, driving toward a highway

pay phone he knew about.

"Helen," he said quickly when he got her on the phone. "This is Jerry. I've got to talk to you. Right away. Get into your street clothes and be standing on the curb. I'll be by in front of the cafe in twenty minutes."

"But—" Helen's anguished voice sounded in the phone. After a brief silence she said, "All right, Jerry. I'll be waiting."

He hung up and started out of the phone booth. There was a click. From force of habit he glanced in the coin return slot. His dime had been returned to him.

"Even the darn phone won't take my money!" he grumbled.

HELEN WAS standing at the curb when he drove up. He pulled up just long enough for her to climb in, gunning the motor and starting again before she had time to close the door.

He drove several blocks without speaking. Helen sat quietly, her eyes straight ahead.

"I just discovered this halo I'm wearing," Jerry said abruptly.

"You—you sound like you resent having it, Jerry," Helen said. "Why?"

"A lot of reasons," Jerry said bitterly. "For one, I don't feel any different. I don't feel like a saint, and I resent being treated like one. I don't like strangers walking up to me and spilling their—their secret sins, and wanting me to forgive them. Who am I to forgive anybody?"

He stared at her defiantly.

"Another good reason," he went on more soberly, "is that here I've been trying to work up courage to ask you for a date, and what happens? You're forced to confess—you love me. Not only that, you immediately feel you have to be so good that it would be a sin to make love to you. And you

start in with that nauseating line that you aren't worthy of me."

"I'm not worthy of you," Helen said. "You're a saint now."

"I'm not either!" Jerry said. He darted her a grin. "I'm a devil, and I want to keep on being one." His grin changed to a fierce frown. "But how the heck can I if everyone treats me like a saint?"

"Maybe you'll get used to it after a few days," Helen said.

"Not as long as you keep thinking you aren't worthy of me," Jerry said darkly. "I'll do something desperate. Steal something. I'm not going to do anything else until I've made you get over your feeling that you aren't worthy of me."

"But I can't help it, Jerry," Helen pleaded. "And it's a good feeling. I'll marry you—if you want—"

"If I want!" Jerry groaned. "Do you think I want that kind of a wife? An obedient slave who thinks she's lucky to lick my boots? What do you think I am? A stuffed shirt? I want a dame who has spunk enough to get tough with me, to play with me, fight with me."

"I'll be that too, if—" she bit her lip.

"If I want," Jerry groaned. "Oh, no. I'm going to drop you off back at the restaurant and go to the plant and find a way to get rid of my halo."

JERRY STOOD in the center of the room looking around vaguely. It was the same underground room in which the ball of light had entered his head. He had come here hoping that he might get some inspiration on how to get rid of the thing and seal it up in the lead container again.

The door was locked so that he wouldn't be interrupted. His breath was still coming a little faster than normal from the ordeal of escaping

guards and technicians who had wanted to bare their souls to him.

"There must be some way of getting rid of the darn thing, I hope," he muttered. Then, "Damn!"

The phone was ringing. He had disconnected the door buzzer but had forgotten the phone. He started to pull it loose from its connecting wires, then hesitated.

"Maybe I'd better answer it or they'll be breaking in," he grumbled. He picked it up. "Hello?"

"Dr. Gerald Graham?" a strange voice asked.

"Yes," Jerry said.

"This is Major Walters," the voice sounded. "I've just arrived and been informed of the situation. I tried to get you to open the door, but you refused to answer the buzzer."

"It would be far better if you didn't see me," Jerry said. "Get more fully acquainted with the situation before you do."

"I gather," Major Walters' voice said cautiously, "that some strange ball of light was the cause of the present disruption of activity here. It somehow entered your head, and now you seem to have a strange effect on people. Is that right?"

"Right," Jerry said. "Now I'm trying to figure out some way to get rid of the thing. Can you feel it over the phone?"

"What am I supposed to feel?" Major Walters said.

"Some kind of an urge to confess your sins to me, I guess," Jerry said. "At least, that's the way it's affected everyone else."

"So I gather," Major Walters said dryly. "No, I don't feel such an urge."

"Thank God," Jerry said. "One sane one in the batch. Maybe you can help me. Over the phone," he added hastily. "Apparently your not seeing me has kept you from feeling the

urge."

"O.K.," Major Walters said. "For the present I'll let you stay where you are, alone. We can discuss the problem over the phone and see if any progress can be made. Do you have any idea what the ball of light was?"

"None whatever," Jerry said. "You've heard, I suppose, that it was picked up on the highway leading into town by a tourist, and that we took it from the glove compartment of his car."

"Yes, I've learned that," Major Walters said. "I thought you might have some idea of its origin. Could it have originated here at the atom plant? Its being found so close lends credence to that belief."

"Not unless some freak of nature produced it," Jerry said. He drew in his breath sharply. "Wait a minute. Yesterday, something unexplained happened. One of the atom piles—number seven—dropped two degrees in temperature for an hour, then returned to normal."

"And this ball of light showed up last night," Major Walters said slowly. "Could be a connection."

"The thing wasn't radioactive," Jerry said, "but that doesn't mean a thing."

"No, it doesn't," Major Walters said. "I wonder if some kind of electronic beam might not have an effect on it?"

"While it's inside my skull?" Jerry said. "Over my dead body!"

"It might come to that, Dr. Graham," Major Walters said. "There's a war on, and this is a highly important scientific development."

"Well, at least give me a chance to try to get the thing out in the open," Jerry said nervously.

"I intend to," Major Walters said. "I'll cooperate with you. Leave your

receiver off the hook so we can hear what goes on down there. If you need help just shout. Meanwhile, unlock the door. I'll see that no one enters. I have my own men here. Men who haven't seen you and aren't trying to confess their sins to you."

CIAGRET stubs measured the hours as Jerry alternately paced the floor and sat at a desk doodling and writing figures. At times he tried to think of some way of dislodging the ball of light from inside his skull; at others he reviewed the known theories of atomic breakdown in an effort to find some clue to the origin of the thing. In neither line of endeavor did he advance one inch.

After a long time he became aware of something new developing. It was a faint urge to get out of the place. He decided it was a natural enough urge. Slowly it grew stronger. Finally he discovered that it was an urge to have people confessing to him.

With a sense of horror he realized that the urge must originate with the ball of light rather than with himself. He went to the phone and got Major Walters, explaining this new development. They agreed between themselves that it would be wise to lock him in from the outside so that he couldn't become a victim of that urge.

A few moments later the major called him to the phone by whistling over it loudly.

"You're locked in now," he informed Jerry.

Immediately after, the urge to get out departed. Jerry got the major on the phone again.

"That's interesting, Doctor," Major Walters said. "It indicates that the thing may have a mind of a sort."

"Not necessarily," Jerry said. "It's more probably the effect of the thing on my brain. I've read of experiments

where brain tissue was subjected to mild irritation, giving rise to thought. I believe this whole thing is more the effect the thing has on my brain than any effect it has directly. Now that I think of it, its entering my skull may be due to some property of the calcium globe of my skull instead of some affinity for the mind."

"It could be as simple as that, all right," Major Walters agreed. "Its presence in your brain may have awakened some dormant property of the brain that makes people confess their sins to you."

"Exactly," Jerry said. "I think that's the way we should look at it." He was silent for a long minute. "I want to try something," he said finally. "If it's attracted by some field property of calcium, maybe I could coax it out by placing a greater mass of the stuff near me. Sort of displace the center of the field."

"I catch," Major Walters said. "I'll scare up some somewhere. Any particular form?"

"It might as well be the same form as my skull," Jerry said. "Get a big bag of ground-up bones or bone dust. A fertilizer store might have some."

An hour later he dragged the bag of bone meal through the door and went to the phone.

"O.K.," he said. "I'm back in again."

He stood looking down at the bag of bone meal while he heard the door being locked again from the outside.

Slowly, strange lights began to interfere with his vision. He turned his head away from the bag of bone meal. The swirling lights died down.

Triumphantly he went to the phone. "I believe that's it," he said to the major. "When I was looking at the bag of bone meal I began to see swirling lights. That could be because the ball of light moved toward the

front of my skull near the optic nerves."

"Good," Major Walters said. "Why don't you try placing your head against the sack? Maybe that would draw it out completely."

"I'll try," Jerry said, turning his head to look in the direction of the sack. He stopped. The ball of light was hovering above the sack, slowly settling toward it.

Dropping the phone, he leaped toward it, wrapping his fingers about it wrecklessly. With rays of light escaping between his fingers he carried the thing over and put it back in the lead container.

"I did it!" he exclaimed hysterically over the phone. "I did it! It's back in the lead container with the plug holding it in. I'm rid of it!"

"SO THAT'S it," Major Walters said as Jerry lifted out the lead plug and let the ball of light drift gently out into view. "Innocent-looking little monster, isn't it?"

"And one of the greatest finds of science," Jerry said. "There isn't much doubt but what it was created by some freak nuclear field in Pile Seven. Or maybe not such a freak. Just something very rare."

He deftly caught the ball of light and placed it back in the lead container, dropping the lead stopper over it to seal it in.

"Let's leave it here and go upstairs," Major Walters said. "I'll post a guard at the entrance to this laboratory."

Ten minutes later they were in Dr. Bowling's office. A very subdued Dr. Bowling.

"How do you feel, Jerry?" the director of the atom plant asked anxiously. "Do you remember everything that happened while you had that thing?"

"Perfectly."

Dr. Bowling walked over to the window, keeping his eyes on the hills two miles away perched above the cliff that formed their base.

"That ball of light—energy—or whatever it is," Major Walters said, "apparently didn't damage your brain tissue at all."

"No," Jerry said. "It was right inside my brain for several hours without the slightest damage—or I'd be dead by now."

"The way I see it," Major Walters went on, "powers latent in the normal human mind were brought out. Did it change *you* in any way that you could feel?"

"No," Jerry said. "I remained just as I always was. My guess is that it awakened some telepathic property of the mind that affected other people, but not me."

"This can become a potent weapon," Major Walters said. "As soon as we know more about it, we may be able to discover how it came into existence in that atom pile."

"I already have some ideas on the subject," Jerry said. "Ordinary particles are a center of fixed mass surrounded by a field. I think in some way that central mass has been converted to pure field, so that we have the first total conversion of mass to energy. It takes the form of a field without a central nucleus, but still centering about a mathematical point. That would account for its not harming my brain structure, and might also account for its changing me into a superman, so to speak. Telepathy would have to be a field effect of brain matter. Probably it acted merely as an amplifier of already existing brain waves, rather than bringing out some dormant property of the brain."

"Whatever happened," Dr. Bowling said from the window, "I can testify

to the fact that it has a remarkable effect on those around the one possessing it. It makes them...vulnerable."

"If it's all right with you two," Jerry said, "I'm going to call it a day. I'm worn out."

"We'll all call it a day," Major Walters said. "The thing is safe enough in that laboratory under this building. Tomorrow further study of it can be begun."

He went to the office door and opened it, standing aside while Jerry and Dr. Bowling went out, then followed them. In the hall, he chuckled. A new type of war weapon—one which made people feel their sins and turn over a new leaf."

JERRY parked his car in a vacant spot near the restaurant and climbed out. There was a worried frown on his face. He was wondering if Helen would still feel unworthy of him. Dr. Bowling had behaved as though he definitely regretted having confessed his intimacy with his secretary. Maybe Helen would be embarrassed about her confession of loving him while under the influence of that ball of light.

He pushed open the door of the restaurant and walked in. The supper crowd was mostly gone. Barely a dozen customers were in the place. Helen, busy waiting on them, didn't see him. He went toward the back and sat down in a booth and waited.

Dirty dishes still rested on the table. Someone had left the afternoon paper. Jerry searched through the crumpled paper for the front page.

War news took up most of the page. It was mostly bad. The Russian-occupation area in Canada had expanded on all fronts several miles during the past twenty-four hours. The battle, involving over thirty thou-

sand American tanks and at least an equal number of enemy tanks, was spread along a thousand-mile front. The radar network around Puget Sound had been deepened fifty miles to compensate for the increased velocity of the new Soviet-guided missiles, so that counter missiles could still rise in time to meet and destroy them.

On an inside page a war analyst discussed the possibility of Soviet forces' dropping paratroopers in various parts of the country to establish occupied islands from which to spread their hold. They were already doing that in eastern Canada, just as the United Nations forces were doing in agrarian parts of Russia.

"Hello, Jerry." He looked up. It was Helen, carefully avoiding his eyes as she picked up the dirty dishes.

"Hi, honey," he said, grinning. "Have you noticed? I don't wear a halo any more."

"Yes, I noticed," she said, still not looking at him.

"Well," he said, "does it improve your attitude toward me? Have you gotten over your feeling of being not worthy of me?"

"That left me an hour ago—suddenly," she said.

Jerry studied her averted eyes.

"Oh, I get it," he said. "You're feeling ashamed of yourself. Well, don't! All that's as if it never was. It wasn't you, anyway, but that darned field of energy. Forget it. I have."

SHE TURNED her eyes on him briefly, then scurried away with her armload of dishes. He grinned at her back. All he had to do was give her time.

"Hi."

Jerry looked around at the newcomer.

"Oh. Hi, Frank," he said. "How're things?"

"O.K., Frank said. "Mind if I sit down?"

"Come ahead," Jerry said.

Frank glanced at the paper as he slid into the seat opposite Jerry's.

"War news looks bad," he said conversationally. "I look for the commies to drop paratroopers right here. Almost any minute."

"Why?" Jerry asked. "It's quite a way from their beachhead in Canada. Too risky."

Frank shrugged indifferently. "Find out anything about that ball of light you got out of that tourist's car this morning?" he asked, his eyes blandly innocent.

"Nothing yet," Jerry said calmly.

"Hello, Frank," Helen said as she came up to the booth. She looked at Jerry, her eyes glowing, and wrinkled her nose mischievously. She was all right again, Jerry decided, noting her tantalizing neckline.

When she left, going toward the kitchen, Jerry slid out of the booth and stood up. "Be back in a minute, Frank," he said. "Got to get something out of the car."

He left the restaurant and hurried to the corner drugstore.

"Hi, Joe," he said to the soda fountain boy, going down the aisle to the bank of phone booths.

"MAJOR WALTERS?" he asked.

When the answer was yes, he breathed a sigh of relief. "Good. I've been calling all over trying to get you. Listen. I've got a hunch. The Ruskies are going to try to get that ball of light."

"They can't very well, unless they drop paratroopers here and succeed in occupying—"

"I know that," Jerry said. "I think they're going to try. Tonight."

"What makes you think so?" Major Walters said.

"A hunch," Jerry said.

"Don't give me that," Major Walters said. "You're too much a man of science not to realize that hunches, if they have any basis in fact, stem from subconsciously known data and reasoning. You know something. Out with it."

"Nothing definite," Jerry said. "Just a slip of the tongue by an acquaintance. It might not be that at all, but it's possible, and I'd rather not give you his name. I'd hate to have a man lose his life as a spy on the strength of it."

"Let's see," Major Walters said, thinking aloud. "We have quite a few defenses here. Not enough to prevent a full-scale air landing, perhaps. But it could be accomplished—tonight."

Muffled by the walls of the telephone booth, the sound of air-raid sirens was born and began rising in wailing crescendo.

"You hear that?" Jerry said. "I was right!"

"It may be only a raid," Major Walters said. "But we can't take any chances. You just forget about it. We'll handle things."

"I'll be at the restaurant where I always eat," Jerry said. "It's—"

"I know where it is," Major Walters said. "Only you'd better get to the nearest air-raid shelter. Goodbye. I can get you if I need you."

Jerry hung up and left the drugstore. Back in the restaurant he slid behind the table and grinned at Frank.

"Find it?" Frank asked.

"Huh?" Jerry said. "Oh. No, I guess I left it at work. Wasn't important anyway."

"Better eat," Frank said. "We've got to get out of here soon. If it's a bunch of paratroopers, this may be our last square meal for a while."

"Yeah," Jerry mumbled through a mouthful of food.

"Hurry, Jerry," Helen said as she came up.

"I'll run along," Frank said, getting up. "I'm finished already."

"Be seeing you, I hope," Jerry grinned.

He watched Frank go toward the door, his eyes thoughtful.

"Hurry, Jerry," Helen said.

"Call for you, Jerry," the cashier at the front called out.

JERRY TOOK another bite to chew on the way to the phone. Helen tagged along with him.

"This is Major Walters," the voice on the phone announced. "See if you can make it out here to the plant. We won't have time to get the damn thing safely away, and we need your advice on where to hide it so it won't be found. Paratroopers have already landed outside of town, but you might be able to make it."

"O.K.," Jerry said. "I can tell you over the phone. Put it—"

He stopped, an expression of surprise appearing around his eyes.

"Put it where?" Major Walters demanded impatiently.

Jerry hesitated, his eyes going to the stainless-steel wall panel beside the phone that covered storage shelves. Reflected in that panel from the angle at which he stood was the front entrance of the restaurant, and standing there, close enough to overhear what he was saying, was Frank.

"Bury it, Major," he said. "There's no place on the grounds you can bury it, and I should know where it is, in case. So take it directly across the road and bury it at the base of the north end of the big sign there."

In the steel panel he saw Frank slip out the door as he hung up.

"Bury what?" Helen asked.

"Let's get into the air-raid shelter, Helen," Jerry said. "Forget what you

heard. It's top secret."

Outside, anti-aircraft searchlights were crisscrossing the sky, revealing the mushroom-like paratrooper chutes that swarmed slowly down, carrying enemy soldiers and equipment.

He took Helen's hand and strolled leisurely along the sidewalk toward the air-raid shelter, whistling an off-key tune. He still felt the tingle of that inspiration that had come to him a brief moment before, of how the ball of light could be used as a weapon to end the war.

"You act as though you were glad the enemy is coming," Helen said, mystified.

"Maybe I am," Jerry said. "I don't think they'll be here long. The war's going to be over very soon."

"What makes you think that, Jerry?" Helen asked.

"Just a hunch."

"IT WAS just a hunch," Jerry said three months later to Major Walters. "I saw Frank standing there where he could hear me. At almost the same time it came to me what that ball of light could do in Russia. I could see some Russian scientist experimenting with it and unwittingly letting it settle inside his head, the long succession of penitent officials until the effects spread right up to the Kremlin." He chuckled, and his bride looked at him proudly, her eyes two bright, shining stars. "Can you imagine the leaders of Communism unable to use their most potent weapon, the Lie, because of a more potent weapon, Conscience?"

"I couldn't have then," Major Walters said.

But he had to raise his voice to be heard above the noise of the people in the street outside the window who were celebrating peace.

THE END

THE OLD IN AGE

DALE LORD

IT WASN'T until the discovery of radioactive activity that it became possible to determine accurately the age of plant and animal fossils found throughout the world.

Uranium is a natural radioactive substance which undergoes a continuous process of disintegration, leaving nothing behind but lead and helium gas. Since this disintegration goes on continuously from the time a rock is first formed, and since we now know the rate of disintegration, the lead-uranium ratio tells age. In terms of this new knowledge, the earth appears to be considerably older than scientists had first thought.

From fossils, astronomers have been able to figure out that air, light and heat from the sun must have been much the same hundreds of years ago as they are today. Since the sun is actually a star, differing only in size, temperature, etc., all theories held previous to the radioactive finds could

not account for a source of energy in such a star which would allow it to give off light and heat continuously for so many millions of years.

In 1905, Einstein proposed the Special Theory of Relativity, with the equation showing how much energy one can get from a given quantity of matter—a tremendous amount. In his book, Harlow Shapely quotes Hans Bethe, who suggests that a single ounce of matter is "energetically equivalent" to the output for a whole month of the hydro-electric plant at Boulder Dam.

This would indicate that the sun must lose more than four million ounces of its mass every second that it radiates sunlight and heat—but this loss, tremendous as it may seem to us, is infinitely small in a mass the size of the sun, and even with this loss the sun could run steadily, at its current rate of energy, for billions of years.

Listen — The Flame

By L. A. Burt

NOTHING has done more to stimulate the study of flames and combustion than the rapid development of jet and rocket engines, and, though men have been using fire for thousands of years, only now is a genuine understanding—beyond the simple chemical facts—of combustion coming about. To the eye any flame appears to be an instantaneous action, even in so simple and small an application as the lighting of an ordinary match.

But that isn't quite true. An examination of the striking of a flame through special "Schlieren" cameras which are capable of registering varying densities of air, shows that shock waves emanate from the initiator of the action much as shock waves lead the lead edges of high-speed aircraft wings.

Up to ten millionths of a second (ten microseconds) after the shock wave has begun to spread, it is so weakened over its wave front that it becomes an ordinary

audible sound wave. At two thousand microseconds, or two thousandths of a second, the flame is already old and stabilizing itself.

Knowledge of the activities of such things as shock waves in flames is required because combustion in jets and rockets occurs under terrific conditions of pressure and velocity and is far different from ordinary, slow combustion. In some respects more is known of nuclear reactions than of these "simple" chemical reactions, which accounts for the effort expended on the seemingly obvious match flame.

The astonishing effectiveness of Schlieren photography clearly shows what happens in flames and arcs and other transient phenomena. Because air bends light waves just as glass does, according, more or less, to the density of the air or gas, it is possible to get clear-cut pictures of the motions of the gas streams.

a fantastic

HE LIVED. . .

Vignette

By E. Bruce Yaches

THE KID closed the control-room door quietly as he went out.

MacGregor looked at me. "That punk gives me the creeps," he said viciously, "always beating his gums about theory. Theory, hell! This ship runs on facts. What do they teach these kids at Nuc-Eng—nothing but theory? I tell you, Skipper, if I have to serve much longer with that smart aleck, I'm gonna get a transfer to Base."

"Wait a minute, Mac," I cautioned. "You've got him tagged wrong. Jannings is a good boy. You've been riding him too hard. Remember this is his first deep space run. He's doing his job. Let him alone, Mac—and that's an order."

And I meant it, too. I could see from the way Mac's lip curled, he didn't like the mild chewing out, but I ran a taut craft and, with thirty million creds of Venusian

drugs aboard, I didn't want any kind of trouble. Mac ordinarily was a good sport, but ever since we'd shipped Jannings, just out of nuclear rocket engineering school and full of enthusiasm, Mac had taken to riding him. As an assistant chief engineer, Jannings couldn't be forced to do the dirty work on controls, but Mac gave him the business in plenty of other nasty ways. I didn't like it, but to avoid an open break with Mac I didn't stop it soon enough. The result was that Mac was driving the kid batty, although I'll admit he took it more graciously than I'd expected him to.

Mac was old-time, Jannings new. The mixture doesn't sit well and, in spite of the rigid discipline of spacemen, things can get out of hand. I clamped down on Mac, but I realized that there were a thousand different little ways in which Mac could make life annoying aboard the *Canopus* for Jannings. Make him do two eight-hour watches in a row, for example, make him run a double-cycle check on the feeders—oh, there were plenty of ways.

Then, mercifully, Mac came down with a virus throat infection, a pick-up from Venusport, no doubt, and the kid had peace. As senior assistant he took over Engineering and, as far as I was concerned, everything ran smoothly. He knew his stuff—most of the time we ran on automatics anyhow—and all the way around we had no trouble. I got to know Jannings better and found out that, as usual, he was just a star-struck kid with the spacemen's lust in his bones. He'd come through Nuc-Eng from an Iowa farm, but he wasn't a farmer when it came to rocket engineering. He knew, before we were a week out, every single nut and bolt in the *Canopus*, and that's a job!

Mac was confined to his cabin and Jannings was bunking when it happened. Loring, my junior, was on watch. That I found out later. All I know is that I was sound asleep when the triple ringing of the alarm went off next to my ear. I popped from the sack so fast I bumped my head and that knocked me into wakefulness. I tore for the control room. When a triple goes off, you run!

Loring was standing over the instrument panel and his face was white. He saw me from the corner of his eye.

"Skipper," he said grimly, "we're in trouble—the reactor's going critical!"

He didn't have to say more. I knew.

It doesn't happen often, but when it does—run.

TO DIE

Ordinarily nothing goes wrong with a nuclear rocket. All the engineering has been done back at the burning dock and, from then on, for the life of the rocket engine, all service and control is handled by automatic servomechanisms. No humans go near a nuclear engine once it's been used. In fact, there's a four-foot shield between the stern tube-sector and the rest of the ship. Beyond that shield, inside the ship or out, no human ventures—the radiation is fierce.

I studied the board and I could see, in a vague way, what had happened. I'm no nuclear engineer. At the same time Janning came into control and, the instant his face fell on the panel, his eyes went wide. Mac was trying to reach control over the intercom, but I told Smith to shut it off. He was too sick to be of any use anyhow.

"Well, Janning, you tell me."

He looked at me and there was something in his eyes that made me shiver, a sort of do-or-die determination.

"She's going critical, Skipper," he said.

"I know that," I answered, "what do we do?"

"The servos are jammed," he went on as if he didn't hear me, "and there's a uranium build-up to critical mass." He glanced at the chronometer on the panel. "A half hour, I'd say," he said, "before she goes. Skipper, this'd make one sweet bomb, but it's not going to."

"What do you mean?" I said. "I can read a panel too. When that needle starts that kind of a climb, this buggy becomes a bomb."

"If you don't stop it," he corrected.

"You can't stop it. The only way the servos can be cleared is for somebody to go out..." I broke off. He was grinning.

"Exactly," he said. "And that's what I'm going to do. See, Skipper, I happen to know we've got Venusian drugs, too. They've got to go through. I don't want to sound melodramatic," he went on as cool as a lecturing professor, "but I know a lot of people who need drugs. There are millions still suffering from the Third Fracas."

I couldn't give him an argument. It was his duty to do what he could, certain death or no certain death. He didn't waste time.

He put on a space suit. His face was white, with two red spots high on his cheek bones. There was no bravado in his face and I could tell he was scared stiff. Who wouldn't be? When you go out to die, you're not exactly happy.

They brought him tools, spanners, meters,

wire-working stuff, a torch—and clipped them to the suit. I watched and I felt almost paralyzed. There was nothing I could do. Either this boy went out and un-jammed those servo controls or this ship would turn into an atomic bomb which we'd watch going off from a million miles or two—along with a cargo of Venusian pharmaceuticals, priceless in terms of human life.

Jannings went out. I shivered when the icon spotted him crossing the red-white danger line marked on the circumference of the ship's stern. He was now a dead man—and he knew it. He stayed out twenty minutes, ten feet away from a ravenously furious blast of atomic radiation, hard X rays, neutrons, alpha particles, and the rest of the atomic gamut. He felt nothing, but his mind told him his cells were being disintegrated and destroyed. Yet his hands never trembled and he went through with the job. Like a surgeon repairing a body, he went to work on the controls, assembling and clearing and un-jamming, knowing the while that the reverse was being done to his body. But, unlike this, a reverse which couldn't be corrected. He was dying—not the easy way, all at once—but by minutes, minutes which a cold, unfeeling chronometer ticked off.

For the first time, he spoke.

"Skipper?"

"Yes..."

"She's clear from here. Will you check the panel?"

"Loring already has," I answered. "She's clear. Come in the lock. We'll see what we can do."

"Hey, Skipper, cut it out. I'm no fool. You can't do a damned thing. We both know it, so let's not get sentimental." The cockiness seemed to cut the mental pain.

"I'm not coming in, Skipper. I'm too hot now." He was referring, of course, to his induced radioactivity. "I'd only contaminate a lock. Why bother? I'm going into the tubes. Blow me to Venus!" He waved jauntily and started to walk toward the main stern tube, his magnetic shoes making clicking sounds along the hull.

He had to make the last gesture. It gave him nerve, I guess. Just before he walked into the tube whose radiant breath would devour him instantly, he tapped his helmet in a half-salute. "*Morituri te saluta...*", he said half-audibly, like a gladiator of old. And then he was gone.

Spacemen aren't sentimental, but I don't think there was a dry eye aboard the *Campus* then.

Mac staggered into the control room then; his eyes avoided me. He started to curse, and for five minutes he ran through the book.

"Skipper," he said, "put me through for a transfer to Terra. I'm not fit...."

"Forget it, Mac," I said, "the kid was an engineer...."

And when I think of it now, I think it was the finest accolade you could give him....

THE END IS THE BEGINNING

BY CARTER T. WAINWRIGHT

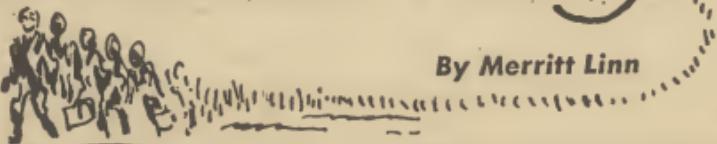
DR. HARLOW SHAPELY says in his book (1946): "It was the fossil bones that led us to knowledge of the atom-splitting in the stars."

This comment would tend to bear out the theory that from both the long-range point of view and that of the immediate present, science is useful and a definite boon to Man.

Even where the findings do not yield

quick dividends, we should always continue with the research. There is a great danger that, in our efforts to find applications for immediate use, we may drift away from research, where the practical results will not show up for many years. We must always remember that the possibility exists that a greater and more far-reaching effect may eventually be found, and that too great haste and overzealousness may preclude such a discovery.

MALTHUS WASN'T MAD



By Merritt Linn

A HUNDRED YEARS ago the gloomy scientist Malthus, economist and philosopher, concluded, as he took a look at the growing world population, that eventually that population would outgrow its food supply. At the time he was taken quite seriously, but then the industrial age came along. Machines worked at a fabulous rate, food began to be produced in abundance, and the theories of Malthus were laughed at by laymen and scientists alike. "There is no limit," his detractors said, "to productivity of food. The food supply will easily be able to keep up with population growth."

And for close to a hundred years they were right. But now the situation is changing and, tragic as this may be, the world is on the verge of a reconsideration of Malthusian ideas. It so happens that the most recent world census has shown that there are now approximately *two and one-half billion* people in the world! Furthermore, the population is increasing each year at a dizzying rate. Inroads in sanitation and medicine are primarily responsible for this increase, for they have penetrated to a great extent into even the most backward Asiatic countries. Also, levels of living—and certainly living standards—have gone up terrifically, and the food supply, not equipped to cope with these conditions, is reaching a point dangerously near exhaustion.

Nor can scientific advances cope with the situation. There are simply too many people in the world right now in propor-

tion to its limited resources. Malthusianism has come full circle.

Everywhere, men are engaging in scientific agriculture. Intensive cultivation goes on everywhere. But the people outstrip the supply. Asia contains one and a half billion people, many more than Europe and the Americas combined, but it has nowhere near the food supply. Consequently, if we judge standards by our own, we are in error. Asia is exploding into a fantastic population growth and an equally fantastic starvation situation. And yet the people increase. The Reds encourage this impossible situation, hoping that it will result in an eventual "Yellow Peril" wherein the Asiatics, relentlessly and irresistibly, will sweep the world before them. That this is possible is of course unfortunately true.

For this reason the world situation hangs on the outmoded ideas of Malthusianism. The only answer to the problem for the future is the control of population, though even this is difficult among the poorly educated and the hopelessly poor who constitute the bulk of Asiatics. War is no answer, of course, since it never decreases populations but rather, paradoxically, increases them. Disease is being conquered. Therefore only the rational control of population through education will be successful in combating this universal menace of unlimited, fecund, jungle-like growth of peoples. Either that, or an eventual reversion to the standards of the most primitive sort of living. In this respect, aside from science's tremendous strides, the future looks bleak indeed!

THE HORROR OF THE HORMONE

BY
Charles
ReCoUR
A
fantastic
VIGNETTE

IVE TAKEN a lot of kidding about it. I The boys in the City Desk Room (actually there're only three, not counting Milly, who runs the lovelorn column) can't help but notice the bulge under my left arm and I don't take particular care to conceal it either. I've got a permit to carry it, so what's the difference? It's a beauty, too, a pre-war German Luger, seven-point-six-five calibre, and I like the feel of it, even if it is a little heavy for a shoulder holster.

Some day I'm going to use that gun. I don't know when, but I'm going to. I've got to. At least me or somebody else.

And that's another thing they kid me about. I'm always driving out to Cartersville, which is just fifteen miles due North of this town, and about equally distant from the University. They think I've got a girl out there and they love to pour it on. But I haven't got a girl in Cartersville. I wish I had. What I've got in Cartersville, nobody should have. But that's ahead of the story.

My eccentricities (if you want to call them that) started about six months ago. Jake, who's been editor of the paper longer than I can remember, gave me my breaks in the beginning and, while it's a far cry from being a big city reporter, I like my job picking up the small interesting stuff that happens everywhere, big city or small town.

"Harry," Jake said to me in his office, "I want you to run over to Cartersville. Drop in on Professor Pickering's Entomological Experimental Station. He's always good for a couple of columns of sensational stuff. I don't believe the guy half the time, but maybe you can drag a good story from him on the new insecticides. The Farmers are always interested in that stuff. Give it a whirl."

I went out to Cartersville and saw Professor Pickering. His lab actually was in a low rambling house and, even though he was fifteen miles from the University, it was considered part of the school. I caught him home that evening—where else would he be?—and he invited me in cordially when he learned I was from the paper. We sat down and, formal-like, he offered me sherry, and when I declined he compounded a couple of healthy Manhattans and we had a drink.

"What can I do for you, young man?" he asked seriously. I didn't get any impression of eccentricity.

I told him what I wanted.

"Well," he said slowly, "I can't say that



I have much to say on that score. My researches aren't along those lines right now. I'm doing a good deal of hormone work—but, say, that should be a good deal more interesting."

He went into a lot of technical detail on how hormone activity governs growth and power and he cited examples of the successful breeding of large pigs with very powerful chemical extractions.

"I'm applying the hormone activity to insects," he said, "and I've had some amazing luck. Come into the lab."

I followed him into a typically cluttered room, a laboratory straight out of a B-thriller, and I guess I expected to see something exciting, but all I saw was bottles and glass.

"Take a look at this," he invited and pointed toward a small wooden box. I looked through the glass cover and I saw nothing remarkable in the sight of a rather big hairy tarantula. I shrugged.

"Seems like a big spider to me."

"I'm glad you said that," Professor Pickering replied, "that's exactly what it is, a big spider. The only thing is, two days ago it was a very tiny spider, hardly bigger than a flea."

"You mean to tell me that these hormone treatments made it that big?"

"Exactly."

WELL, THE essence of the visit was that he provided me with a rather interesting piece on hormone growth chemicals. I went back, wrote it up, and thought no more about it. Jake got a kick out of it and said I should follow it up. I don't suppose I would have, though, if it hadn't been for the phone call. It came a day later.

"Harry?" It was the Professor all right, and his voice was a shade excited. "Come over if you can right now; I want to show you something very interesting."

I breezed over right away and Professor Pickering took me immediately into the laboratory. "Look!" was all he said.

I looked. On the lab bench rested a box about two feet square; it was made of glass, like a fish-container, held at the edges with metal, cemented strips. Inside was the biggest, ugliest spider I'd ever seen.

"It's the same one you saw the other night," Pickering assured me, "and, as far as I can tell, there's no limit to this thing."

"But what about the danger?" I said. "Suppose that thing gets loose!"

"It isn't really dangerous yet. Wait until it gets bigger." He seemed like a little boy, proud of finding a big toad.

The next three or four days I dropped out to Cartersville every evening—and I practically watched that damned thing grow. I didn't write it up, because Professor Pickering requested that I give him the honor of "announcing it" when it reached its limiting growth.

The night before I made the final visit

to the lab, Pickering had constructed a five-foot cage of half-inch drill rod welded and equipped with a sturdily barred and locked door. He put the "thing" into this improvised cage. We sat there and watched it, and the more we looked at it, the more evil and dangerous it seemed to me. But Professor Pickering seemed to think of it as an experiment and nothing else. The dangerous aspects didn't bother him.

He fed the three-foot monster while I was there, and I'll never forget the way it devoured that rabbit corpse. When it had finished there was not a trace left, no blood, no bones, no hair—nothing.

"I'm afraid you ought to be more careful, Professor," I cautioned as I was leaving. "That thing's not exactly a toy."

"Don't worry," he deprecated, "I'm taking care of it. It can't do anything in that cage."

I didn't go back to Cartersville for three days. It was rather late when I got there and the lab lights were on. I rang but got no answer. I thought it rather peculiar, so I just opened the door and walked in. I called "Professor Pickering?" but there was no answer. I wandered through the house-lab and there was no sign of him. I went into the lab and he wasn't there either. And neither was the spider!

The cage still stood in one corner. It was empty and the door swung open. I examined the lock. It looked as though shears had cut right through the steel tongue. I got out of that place in a hurry and headed right for the police. I told them the complete story, but they looked at me as though I were drunk.

When they went back to the lab they found things as I'd described them, with no trace of Professor Pickering. And he hasn't shown up to this day. That was over six months ago!

Brady, the Police Chief, told Jake I must have been loaded to the ears to come around with a story like that. They figured that Pickering just got fed up and took a walk-out powder. I can still hear Brady's sneering, "Forget it, Harry. He's in Mexico having a second-childhood fling, that's all."

So I bought the gun. So I go to Cartersville regularly and I haunt the side roads and the woods. I haven't heard of any farmers missing cattle or animals, nor have I heard of any humans missing. But I know damned well that thing is loose and it's eating something!

Maybe it's left this vicinity. I don't know. But I'm inclined to believe it's around. Anyhow, I'm looking for it and I'm hoping I meet it—and yet I'm afraid I will. The gang laugh at the idea and they want to know what the stuff was. "That must have been real kick-a-poo joy juice, Harry," they'll josh, "where can we get some?" Or, "How's the spider-hunt, Harry? Any luck? Bring me back a leg."

I laugh, but it's kind of hollow. I've seen that thing...

READER'S PAGE

RATING FOR THE YEAR 1951

Dear LES:

With the year's last FA read, I am sending the First Annual Rating of the Ziff-Davis mags. This will definitely *not* be an arbitrary Top Five, Top Ten, Top Twenty, or anything in that line. Thirteen stories are listed because those thirteen deserve it. The stories are divided into THE BEST and The Very Good Ones.

THE BEST:

"Invasion From The Deep": Paul Fairman's wonderful novel takes first place in FA and second in the pulp field for the year (Leigh Brackett's "The Starmen of Lyrdis" was first). I won't discuss this one further, since it was pretty thoroughly covered in an earlier letter.

"Empire Of Evil" by Robert Arnette: The best in AS. Could Arnette be a pen name for E. K. Jarvis? Anyway, the yarn had fast action, fine plotting and good characterization.

"We The Machine" by Gerald Vance: As I said in another letter, excellent. It also had the year's best cover, by Joe Tillotson.

"Whom The Gods Would Slay": Ivar Jorgensen's first novel and one that I'll always remember. How about a sequel?

The Very Good Ones:

"Forty Days Has September" by Milton Lesser. A fine yarn, though not to be compared to the above quartet. When can we expect another Lesser lead novel?

"The Sword of Ra" by Geoff St. Reynard. Krepps' wonderful yarn of the Egyptian gods. You know, this story, along with "Beyond the Fearful Forrest" and "Beware, the Usurpers", from IMAGINATION, should make St. Bob the author of the year. Any arguments?

"Conditioned Reflex": McGivern, and beautiful.

"Who Sows the Wind": Graham's best for you this year. It would have been higher except for a hasty ending.

"The Space Witch": Walter M. Miller. The only thing wrong with this one was that it was too short.

"Dark Benediction": Another by Miller, and another that needs a sequel.

"Operation RSVP": H. Beam Piper.

"Vampire of the Deep": Graham's second best this year.

"In What Dark Mind": Another one by Rog.

Now, what about 1952? Well, starting off AMAZING with Miller and Wilcox novels should promise a wonderful begin-

ning for AS. In FA, however, all you've announced is "Rest in Agony" by Jorgensen (could that be the sequel I was hoping for?). Don't be so secretive about your future novels. Let us eager fans know what you've got on hand. That's one flaw I want corrected in '52.

James Lynch
2630 Penn Avenue North
Minneapolis, Minnesota

Judging from our backlog of inventory, and from the type of stories we intend to buy, 1952 will even outdistance '51 in "the best science-fiction-fantasy".

Ivar Jorgensen seems to have been our jackpot for '51. This new find soared to the tops in popularity with all our readers. We spoke with Ivar about a sequel to his first novel, and he's promised to give it some thought. So keep your fingers crossed....

You must have missed the March FA. Milt Lesser's lead, "He Fell Among Thieves", is a terrific yarn. Ed.

AND FROM WAY BACK...

Dear Sir:

This is to tell you that I appreciated very much the Charles Myers story in your magazine of June 1950. Sorry I haven't had time to write until now.

F. H. Fitts
3101 Hillside Avenue
Decatur, Georgia

Thanks. It's never too late. Ed.

AEEEEEEEEE!

Dear Editor:

I happened to be sitting here idly twiddling my four thumbs, when I decided to "get in the swim" and tell the editor of FANTASTIC ADVENTURES what I thought of his magazine. You can start breathing again, Ed., your zine is tops, and I'm speaking from three years' experience with various publications.

Now to the stories in the December issue:

(1) "Jongor Fights Back"—Quite good. I enjoy this type of adventure.

(2) "No Price Too Great"—Fair

(3) "He Knew What He Wanted"—No comment.

(4) "Deadly Cargo"—Very good. Always had a place in my heart for Paul

Fairman.

(5) "The Joker"—Didn't think much of it.

(6) "Never Shoot A Stranger"—Not bad.

Now to a gripe—In "Jongor Fights Back" it seemed that all the heroine could do was emit blood-curdling screams.

Allow me to illustrate:

Page 9—"Jongor, get away!" Ann screamed.

Page 9—"Murtos!" she screamed.

Page 9—"Jongor!" she screamed.

Page 11 (Here Orko screamed.)

Page 12—"You leave him alone," Ann screamed.

Page 17—(She wanted to scream.)

Page 17—"...in the form of an ear-splitting scream."

Page 19—"The night was split with the sudden explosive violence of Ann Hunter's scream."

Page 24—"A spitting snarl answered Ann Hunter's scream."

Page 25—"She screamed and awakened with a horrible shudder."

Etc.

See what I mean? Too much screaming altogether. Poor girl must have had a dilly of a headache after all that.

That's enough for now. Keep up the good work on an equally good magazine.

M. Hartman
Box 666
Camrose, Alta.

IVAR: YOU EITHER LIKE HIM...

Dear Sir:

I have been a sf addict, or fan, if you prefer the latter term, since I picked up a cousin's copy of AMAZING in September 1929. During the intervening years, I have read every copy of sf—whether magazine or book—I could lay my hands on, and have usually enjoyed them—good stories, bad or indifferent—indiscriminately, with very few exceptions.

The few exceptions include only one type of story (and not all of this type are included), the ones labelled as "weird" or "fantasy". The undesirable (to me) stories are the Fortean or Lovecraft type. I've begun many a Lovecraft story and left it unfinished, because I can't stomach the material evil spirits cavorting about. For some reason, authors of this type of story seem to admit of only one kind of evil—namely, sexual orgies and death with excruciating pain.

However, the prime reason for this first "letter to the Editor" I have ever written will seem a renunciation of what I've just said. Only once before in my long career of sf reading have I been so fascinated by a story. Then it was Will Shiras' "In Hiding"; now "Rest in Agony" by Ivar Jorgensen.

I was so fascinated and entranced with your lead novel that a full hour elapsed

without my realizing it. Had I been riding the bus, I'd have passed my stop and never known it—something that has never happened to me, believe it or not. The only reason I can find for the fascination this novel held is that it was so well written and tightly knit. The plot is the same old tripe found in Shaver, Lovecraft, and I don't know how many others—ince I don't even attempt to remember even the better attempts, much less the poorer ones.

I'd really like to see what Jorgensen could do with some of the really interesting types of sf. The psychological, anthropological, physical or chemical bases for plots—like the second story, "Wrestlers Are Revolting".

Incidentally, FANTASTIC ADVENTURES and AMAZING STORIES both rank third on my preferred list of sf magazines. First and second are GALAXY and ASTOUNDING, but I read all I can find and feel very frustrated when I have nothing to read and there are no issues of any sf magazines on the stands which I haven't already read.

Also, I will be extremely grateful when all sf magazines follow the lead of those which have already removed from their cover pages the ubiquitous girl with the impossible brassiere—and I mean impossible, except if painted on.

And now perhaps you know why I call myself an addict rather than a fan of science-fiction-fantasy. Whether I have to tear off and destroy the cover as soon as I've paid for the magazine; whether I read a story and say "Poo!" or "Tripe, again!" or "Marvelous!", "Wonderful", etc., or "Aw, hell, that stinks!"; whether I find stories that I read and reread, or that I go back and leaf through for the passages I especially liked; whether or not I still wait avidly for latest issues to come off the press, issues of any and all of the sf magazines, and am busily reading my escape literature before I've reached the street. Who knows, perhaps some day they'll all be good!

Sylvia Tzinberg
401 Laurel Street
St. Louis 12, Missouri

P.S. Just rereading your editorial—the paragraph where you give your impression of the lead story—"too much fantasy?"—perhaps; "too weird?"—yes; "too erotic?"—yes; but "too much science"—good grief, there isn't a grain of science in all 32,000 of the words! It's not the plot that makes this story good, it's the author's way with the English language!

Dear Ed:

Wotta cover this time! Valigursky ain't so hot on interiors, but whatever you do, keep him on the covers! This is your best cover since the MacCauley for Bob Bloch's "The Devil With You", and that was

really something!

I'm now half way through Jorgensen's "Rest in Agony", and eee-yah-hoo! Keep up this kind of story!

As for "Wrestlers Are Revolting", it's up to St. Reynard's usual standard—super!

"Secret of Gallows Hill" was O.K., and even Virg Finlay slacked up a bit on this one.

When I started out to read "When Greed Steps in...", I thought it would be just another space opera. It was. Not, however, that I've anything against space opera—I love it—but I'd read an Eando Binder story in a comic book with the same idea. Koger's inimitable style was all that saved it.

I haven't read Liston's yarn yet, but that illo was really SOMETHING!

The illos this ish were all top quality.

Ads and articles were just as crummy as ever.

Suggestion: Reproduce that cover on slick paper sans lettering, suitable for framing, and sell copies for 25c each.

Eldon K. Everett
Post Office Box 513
Tacoma, Washington

Dear Ed:

One question: Why, oh why, did you cut the Reader's Page? No letters? Impossible! No space? You could have taken out some of the fillers. Too many of these anyway. So, how come?

Now the stories:

"Rest In Agony"—Jorgensen. Pretty good, pretty good. A bit sexy, but good.

"Wrestlers Are Revolting"—St. Reynard. Was there supposed to be a plot here?

"Secret Of Gallows Hill"—Fairman. How can you print such tripe!

"When Greed Steps In"—Rayer. Good, but you could guess the ending.

"Satellite Of Destruction"—Liston. This was the best in the book. Excellent! Is Liston a pen name?

Who's this Catoe character that wrote such a complimentary letter? (Not that mine's much better.)

Nice cover, a bit different from your usual.

I now desist, having said nothing, given no profound thoughts, done nothing.

I go.

*
Barry Prag
2555 N. W. Northrup St.
Portland, Oregon

Dear Ed:

Just terminated the reading (did that come out of me?) of your Jan ish of FANTASTIC, and I thought I'd tentatively use up a few yards of typewriter ribbon to venture my opinion. I rated Ivar's "Rest in Agony" first on the list. Ivar's getting sexy—too bad. When I read his

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FANTASTIC ADVENTURES

first work, "Whom the Gods Would Slay", I thought he was really a budding author. He blossomed out fast.

Next was "Wrestlers Are Revolting" by St. Reynard, although the title wasn't, and still isn't, so hot. Say, how do you pronounce that name? REYNard, or REYNARD? "Satellite of Destruction" was third, and breathing down its neck came "When Greed Steps In".

"Secret of Gallows Hill" wasn't worth mentioning.

About "Wrestlers Are Revolting". Why can't we have a story about Earth with a Utopian future with no catches, instead of our being ruled by dictatorships disguised as democracies.

Bob Paulive
715 West 175th Street
New York 33, New York

Dear Les:

The next time you find a story that affects you the way "Rest in Agony" did, please buy it quickly. It's good, very good. Jorgensen has me all mixed up. No, I'm not going to raise the question about his name, I don't care. Here's where my bewilderment comes in. The writing is too skillfully done for him to be a neophyte. I say that in spite of his setting Hal's age as 21, having him act a gauche seventeen and—shall we say emoté?—with an experience level of thirty. Anyway, the story is good enough to stand minor discrepancies. The introduction, roughly up to the point of meeting Payson, is intangibly better writing than the balance of the story.

The cover on the January issue I don't like. In no way reflecting upon the skill of the artist. It's the subject matter. I plead guilty to an aversion to snakes, sinuous, slithery, sacred; I don't care whether they seize, scurry, slide, strangle, sting, swallow or squirm. Even less in the adverb field where they perform (see above S's or Roget) sinuously, subtly, slanderously or surreptitiously. Even painted ones are scaly, ugly, abhorrent. With such a set of emotions aroused, you wouldn't expect me to like the gal, would you? I don't even with bra by Goodyear.

Perhaps the mutual admiration for Finlay puts me in Terry Carr's corner. He may need some good backer-uppers. I agree that some of the letters are pretty juvenile and temper snap judgment by remembering that juveniles grow up. There are times, too, when a friendly pup is more entertaining than a grouchy old dog.

Semantics would be first in order for a good scrap, though. Just what is the meaning and/or implications of "fannish". Differentiate between "fan" and "fanatic" for instance. Anyway, I like the letter corner and have to hang onto copies of old magazines until the letter crop on the issue is settled so that I can refer back. I

pass my magazines on eventually—no sense in not letting others enjoy them. A boy in a san in Ontario—a reader in England who cannot purchase—fellow enthusiasts here in Santa Fe. Fun is intensified by sharing.

Alice Bullock
812 Gildersleeve
Santa Fe, New Mexico

Dear LES:

What are you trying to do to me, FANTASTIC ADVENTURES is supposed to be a lousy mag, but the January issue was quite good for a change. This new author Jorgensen is the greatest thing since "bottled beer" and his story "Rest In Agony" was one of the greatest stories I have ever read in your magazine; all the rest of the stories were above your usual standards as well, with the exception of St. Reynard's *yaayn*, which was below his usual high standard of writing.

The cover was not bad; in fact it was pretty good compared to most of your ghastly outside decorations.

You are still not as good as your sister mag, the one and only AMAZING.

Anyone care to drop me a line? I'm 15.

Roy (Sig) Torgeson
74 Park Avenue
Oceanside, New York

Dear LES:

Your experiment was a success! Ivar's "Rest in Agony" was almost as good as "Whom the Gods Would Slay", and much *much* better than "A Handful of Dust", which really *was* too weird.

It seems impossible that the Valigursky who did this month's cover is the same Valigursky who did that November mess. Wonderful!

"Wrestlers Are Revolting!", of course, was the good job that can always be expected from St. Bob. I agree with the title!

When I listed my favorite stories of 1951 last month, I overlooked one yarn that deserved inclusion. Add Milt Lesser's "Gordak's Cargo" to my list of the best of '51.

I saw "When Worlds Collide" a few days ago and heartily second your rave notices of a few months back.

James Lynch
2630 Penn Avenue North
Minneapolis, Minnesota

Dear Ed:

Depending upon how you feel about this, you can murder or thank Ivar Jorgensen for making me start writing these letters to FA again. Jorgensen and "Rest in Agony". It is hard to put it in place in the January mag. It wasn't what you can call good, but it wasn't anything enough to be called not good. It was the kind of

story idea that everyone who has ever read a smattering of the Arabian Nights, some science fiction, heard of the devil, read some old mythology and fairy tales, and heard a little bit about strange cults, dreams up. But would never put down on paper. Only everybody can't dream it up in the manner Jorgensen has. It's something in his style of writing, some little thing in his technique, that makes him such an accomplished writer. I can't tell you what it is. If I could, I'd be writing for FA. It's...well, it's just Jorgensen.

Aha! Geoff St. Reynard is back. I was beginning to think that when Bill Hamling left for IMAGINATION he took St. Reynard along with him for good.

As far as "Wrestlers Are Revolting" is concerned—well, in the few short years stf and I have been acquainted, much better ones were done by Geoff St. Reynard. I remember one short story in particular, "Five Years in the Mar-malade". Oh, what memories.

As for the rest of the stories, very, very good and chilling. Don't feel like walking in the woods any more.

"When Greed Steps In"—nice gimmick.

"Satellite of Destruction"—so—so, less said the better.

Like the Lord knows how many other readers, I beseech, beg, ask, please, please bring back Men Behind FA and AS.

Skimming through, I notice many comments on the October '51 issue. Personally, "A Handful of Dust" receives my vote as Number 1. It had that "something which is Jorgensen."

Dear Miss Catoe, all stories do not need to have a climax, in the sense in which you use it. Some of the very best have had their climaxes just before or after the story proper. If you read Bradbury's "The Martian Chronicles" you can recall one example at least: "There Shall Be Soft Rains". The real and tragic climax happened just before the story, when the bomb fell.

Re Terry Carr's comment on letters. I wouldn't say I have exactly noted the difference in calibre as far as the letter columns of both AS and FA are concerned. I wonder just how many people both AS and FA have introduced to the field of science fiction. I know yours were the mags which made the bug bite deep on me.

Although from a technical standpoint GALAXY consistently publishes work of an average higher calibre, it seems that AS in particular has perhaps one of the, if not the, highest circulation of a science-fiction mag on the stands. (At least, I can publicly state that it's first sold out.) And of the mags I have read, AMAZING is in the top-five category. In mine own opinion, at least. And FA in the top six.

Arlene E. Gingold
60 Elm Street
Ellenville, New York



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JUST HOW BARBARIC CAN
MAN GET?

Dear Sir:

As you stated in the Editor's Notebook of January 1951, "Rest in Agony" by Jorgensen was an experiment. May I say that your experiment failed; it would have been much better if the story were titled "Rest in Peace" and buried six feet under brimstone.

"Rest in Agony" is the type of story I enjoy reading, once every decade. You warned the readers about "Rest in Agony" being extreme; when you print the next story of this type in 1961, please remind me to open my windows or you might lose a fan. Ask Mr. Jorgensen if he is an energumen. If so, I will understand how it was possible for him to write such a story as "Rest in Agony".

"Satellite of Destruction" by Liston, an excellent story. Too bad it wasn't 20,000 words longer—this is the type of story I like to read.

The rest of the stories were the usual good fill-ins. Can anyone tell me what type of sf is published in England, and where I can get some copies?

Benjamin Lasev
2411 Woodhull Avenue
Bronx 69, New York

Dear Sir:

You ask concerning the story "Rest in Agony" by Ivar Jorgensen. It is too similar to those of Richard Shaver.

I stopped taking your magazine on account of Richard Shaver. This issue, FANTASTIC ADVENTURES for January 1952, contains the same sort of eroticism and sense of uncleanness that made me stop other magazines (after one year of no Shaver, too).

There are plenty of magazines on the market appealing to that sort of mind. Surely there can be one magazine that sticks to clean, hard ground in fantasy and still earn money. The trouble with walking in mire is that one goes deeper and deeper, soon to be sucked under.

Lest I begin to moralize, I shall close,

Ellen Johnson
Jacksonville, Florida

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Dear LES:

Just received latest issue of FA and am quite satisfied with the issue as a whole, but am disappointed in the mediocre cover. The original must have looked nice, what with the display of colors evident, but it certainly didn't show up at its best when reproduced on pulp format.

The lead novel by Mallory Storm, "Pattern for Tomorrow", was quite good, but the logic seemed a little off. Man wouldn't revert to such barbarism even after a tremendous atomic war of the type you mention. Good story, though. But poor Brian! I couldn't stand that Varna. Guess you can't have everything, though. Storms's a pen name isn't it? I know—we said the same thing about Ivar, but "Pattern for Tomorrow" sounded a lot like one of Sturgeon's things. Correct me—if you dare!

Sort of like "Pattern" stories, don't you? "Pattern in the Dust" by Ivar Jorgensen was good, but I prefer his novels. Same with A. Merrit. He seems to develop a plot better when he has a great deal of space.

"What's On Your Mind" and "Spacemen Die Hard" were fair, even though the latter belonged more in AS than it did in FANTASTIC ADVENTURES.

"A Child is Missing" was definitely the best in the mag. Good plot, with nice twists.

You had a good editorial, LES. Perhaps if some readers and editors would take those ten commandments seriously, it would actually be a help. Like Aesop's fables—there's a lot of underlying truth in them.

Now to look over the letter department. Jim Harmon and Tom Birmingham had the best letters, with Mrs. D. P. Lynn coming in as a close third.

I'd like to say one more thing before I close: I'm very dissatisfied with your present format. It gets raggy and tears very easily, and is not compact at all for binding. Hope you change it. Hear you are going digest size and reprinting novels from AS. Don't. Put out a new mag, if you want, but keep FA the way it is, as I said in my last letter before I'd even heard the news.

Well, that's all for this issue. Bon Voyage!

Robert D. McNamara
50 Plaza Street
Brooklyn 17, New York

We dare. Mallory Storm is definitely not Theodore Sturgeon. As for your other question, we promise not to desert. Fear not for FA. Ed.

NOT BAD—JUST CRAZY

Dear Eds:

Just finished the January FA. It was P.D.G. If only you didn't print on old blotters. And those edges are shaggier than my faithful old dog. But all is forgiven. The ink marks that cover your pages were put together in some good stories. I liked "Wrestlers Are Revolting" myself. That "Rest in Agony" was real crazy. Not bad, but crazy.

To tell the truth, the main reason why I started shelling out quarters for your mag is because my friend Steve watches me like a hawk every time I try to sneak out of one of his from his gas station, so I had to buy my own. Now I am caught in your clutches.

Now we come to the body of my letter. I say "body" because it is pretty dead. I would like to compare FA to some of the other sf offerings on the market.

(1) ASF. Supposedly the king of sf. This is getting so technical, it is hard to understand. Comes up with good stories once in a while, but who cares about the effect of gamma rays on smorgasbord, anyhow?

(2) GALAXY. Leaves me cold.

(3) MARVEL. In my opinion, one of the best. Could give anybody competition.

(4) FA and AS. These two give a reader his money's worth. Easy and entertaining reading all the way. This is an honest opinion, believe it or not. Your mags have everything, only how about a little more humor? That's one thing that never hurt anybody. But seriously, I like your stuff. It makes for easier rolling and milder smoking and it's easier on the T-zone. (Think-zone)

I doubt if this will be printed because of Nos. 1, 2 and 3, but I think this an average sf fan letter, and if by some strange chance it does make the grade, I will be very happy.

Hap Kliban (male, 17)
Shorefront Park
South Norwalk, Conn.

P.S. Letters from other fans invited!

FROM THE MOUTHS OF OLD FOGIES...

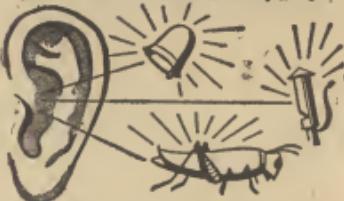
Dear Sirs:

Yipes! All these intelligent teenagers! I feel like an old fogey (being 22 whole years old). In my teens I was still furtively enjoying the "Oz" books (forerunners of sf?). Well, in my decrepit fashion, I'd like to tell you how very much I enjoy FA and AS.

I am reading sf and fantasy against great opposition—including my two-year-olds. But I shall proceed against any odds ("Why are you reading that trash?")

I've never met another person who liked my beloved "trash". Love to hear from one or two.

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Keep up the good work and please include a "paralaray" with each issue to fight off the lorgnetted females who scream "My dear! That junk!"

(Mrs.) Nanette E. Coulter
1746 Market Street
San Francisco, California

People who are influenced by the jibes of others, miss out on the pleasure they'd get from doing what they really want to do. We hope you will continue to enjoy reading FA and AS, as much as we do preparing it for you. Ed.

FROM THE UNITED KINGDOM...

Dear Sir:

I would like to congratulate you on printing such a fine magazine as FA. The stories are great. The cover paintings are perfect, and the inside illustrations are very good. Unfortunately, we cannot get many over here. But what few we so obtain we enjoy very much. Most of them are British Reprints. I bought a copy last week, and I could not put it down. There was a story by Franklin Bahl called "Justice of Tor". It was the best story I've ever read and I've been reading sf for years. Let's have more by Bahl, please. "The Radiant Menace" by Geoff St. Reynard was very good, and "Hell is Where You Find It", by Gilbert Grant, was good too. The rest I did not like.

I always look forward to reading the Reader's Page. It's very interesting.

Please, could you do something about the fillers? They're getting worse and worse. I don't bother to read them now. We have just seen "Destination Moon" over here, and "Rocket Ship XM". I enjoyed them very much.

We don't get many American science-fiction books over here except the British Reprints. I wonder if any of your fans would care to exchange mags with me. I have quite a large supply of British mags, if any of your fans are interested. I would be very happy to hear from them.

One more thing before I close. Could you please publish some of Edgar Rice Burroughs' Martian novels? I've heard such a lot about them, but I have never read any. Best wishes to your magazine and all concerned.

Yours faithfully,

Brian Goodey
21 Marian Road
West Shore, Llanduono
North Wales, Great Britain

Dear Editor:

Allow me to say thank you for Issue No. 8. It is, I think, one of the best to date. The lead story was the best by far, the "Justice of Tor" being as good a title as I can think of. It was a pity Davy had to die but I suppose that there was no

other way out.

Second story in this issue was the "Radiant Menace", a cunning plot but ending, I think, on rather a flat note! Third, "The Trouble with 'Ants'". Mr. Simak has written a number of far better stories than that. "Here is Where You Find It"—well told, as all the stories are, but just a little bit weak. And last, "Who Sleeps With Angels". All I can say is I've read stories which are worse.

However, on the whole I think it was a good issue for two shillings. The cover—ah, now that is what I call an sf cover. No half-naked women. Hooray!

One last item. Are there any English readers about my own age (14) who would like to correspond with me? If so, would they write to me at the address below. Thanking you for this issue, and waiting impatiently for the next, I remain,

Yours faithfully,

A. B. King
163 Devonshire Avenue
Southsea, Hants, England

P.S. Any chance of reprinting some of the tales by the old masters—Van Vogt, Chandler, Burroughs, and the rest?

The present editorial policy of *FANTASTIC ADVENTURES* and *AMAZING STORIES* prohibits reprints. We have a surprise for you, however, coming up soon. Watch the May issues of FA and AS, for an announcement. Ed.

FLIGHT on 10-15 NOW LEAVING by WILTON AVERY MACDONALD

AMERICANS ARE not the only space adventurers. Now Russia joins the ranks. According to M. K. Tikhonravov, a member of the Soviet Academy of Artillery Sciences, rocket trips to the moon are already possible, and will undoubtedly take place within the next ten to fifteen years, at the very latest.

He said that the first step in interplanetary flights would be to build an artificial moon to serve as a launching platform.

The predicting scientist did not in any way hint that Soviet scientists might be actively working on such a project. But it would be funny if the first two rockets to land on the moon simultaneously were from America and Russia!

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PETER DAKIN

CHANCES ARE that if you're lean and unmuscular, you'll be working for the government. Moderately thin, with better than average muscles—and you're a scientist. Medium fleshiness, below-par muscular ability, and you may be an artist. While the legal profession attracts the portly man of sub-par muscularity—although there are a fair-sized portion, too, of well-muscled lawyer types. These observations are from a study made by two Harvard anthropologists on life patterns and body measurements, and their relationship.

Dr. Dudley A. Sargent, former physical director at Harvard, took thousands of body-measurement photographs of Harvard students through the years from 1876 to 1912. Frederick Stagg, researcher in physical anthropology, and Ernest A. Hooton, anthropologist, worked in collaboration, using the measurements together with material gathered from intensive biographical research.

Mr. Stagg says: "In each occupation, of course, are successful men of many body types, but...a definite correlation (exists) between particular body types and particular occupations."

MEN BEHIND FANTASTIC

(continued from page 2)

Electro, AMAZING STORIES and FANTASTIC ADVENTURES, they had no idea they were to meet an emissary of future man. Not only does Electro talk, walk, smoke, count—but this 260 pounds of concentrated magic does over 26 remarkable feats in an almost human performance. Sparko, his dog, sits up, begs, barks and wags his tail. The antics these two performed enthralled the entire luncheon audience.

Editor-in-Chief Browne was solemnly introduced to Electro, who said, after the formalities were over, that he had a brain weighing 60 pounds. Nonplussed, Browne confessed, "Friend, you top me!"

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